Resource assessment: Neolithic and Early Bronze Age
Consultation draft

Neolithic and Early Bronze Age Specialist Group members:

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Note (not for inclusion in actual Assessment!).
In some ways it would have been better to start from scratch with this, but the brief is for an 'update', so that is what I have attempted, retaining much of the original structure and (where possible) much of the original text. I have tried to incorporate all relevant new material, without losing too much of the old. This consultation draft is somewhat inconsistent in that it deals with some things in greater detail than others, and it probably includes some unnecessary repetition between some sections. It still requires quite a bit of editing, but I thought I should circulate it now - all constructive comments, however critical, will be gratefully received and where appropriate worked into the next (hopefully final!) draft. It will be good to get this Assessment agreed asap so we can then get cracking with drafting the Agenda, which is in many ways the most important bit of the NERRF2 process.

1. Introduction

1.1 Defining the Neolithic and early Bronze Age

When plans for the original NERRF project were first drafted, the intention was to have three separate sections covering Neolithic, Bronze Age and Iron Age. This was later amended to two sections, with the Bronze Age effectively divided into two halves: the Neolithic and early Bronze Age (including the Chalcolithic, though debate still rages as to whether this should be classified as a 'separate' period; see the various opinions expressed in Allen, Gardner & Sheridan 2012) and the later Bronze Age and Iron Age. This distinction reflects the real division that seems to have occurred during the middle Bronze Age, in the centuries around 1500BC, from an 'ancestral landscape' of ceremonial and burial monuments to an 'agricultural landscape' of farms and fields (Frodsham 2006). Although this is in some ways a simplistic division, it does reflect a major change in the landscape, and ways in which people interacted with the landscape, which was more profound that any changes that occurred between Neolithic and Bronze Age, or Bronze Age and Iron Age. Consequently this chapter covers the first of these periods, while the next covers the latter. In the original NERFF publication, this distinction was not explicit and there was some confusion, with, for example, late Bronze Age farmsteads being discussed in the Neolithic and early Bronze age chapter.

The transition between the two periods must not be neglected and will be discussed here, and the same also applies to the Mesolithic-Neolithic transition, but essentially this chapter covers the period from the onset of 'neolithicisation' in about 4000BC through to the intensification of agriculture that seems to have occurred in many places throughout our region in about 1500BC. Other than this, the general structure of the following Resource Assessment follows the original of 2006, with alterations and additions to take account of subsequent developments.

The thematic structure adopted here is not ideal as it forces us to dip in and out of our most complex landscapes (such as Milfield and Street House, from opposite ends of our region) without considering regional sequences in any detail. Such regional sequences, and the differences between them, are crucial to understanding the north-east Neolithic, and will feature prominently in the Research Agenda arising out of this Assessment.

1.2 History of research

Upstanding prehistoric remains have long exerted a fascination on those wishing to understand the history of the North-East, but it was not until the nineteenth century that there was a concerted attempt to explore and excavate them. Amongst the more prolific of the early explorers was Canon William Greenwell, a Durham clergyman who carried out excavations on a large number of barrows in Durham, Northumberland, and Yorkshire (Kinnes and Longworth 1985; Graves and O'Connor 2003). Most of the artefacts collected by Greenwell are now in the British Museum. Other early scholars mainly focused their work on Northumberland. George Tate excavated at Threestoneburn Stone Circle, Greaves Ash and Yeavering, and made a pioneering early study of rock art (Tate 1863a; 1863b; 1865). Henry MacLauchlan, an employee of the Duke of Northumberland, also made a series of important surveys on ducal estates in the 1860s (MacLauchlan 1852; 1864).

In the 20th century, despite the teaching of archaeology at both Durham and Newcastle (King's College, Durham, until 1963), little work on the prehistory of the region was carried out before World War II. For a long time the only university scholar to undertake significant fieldwork was George Jobey, and his work mainly focused on the Iron Age, although in the 1930s Nancy Newbigin did research rock art and other sites, excavating the long cairns at Bellshiel Law and the Devil's Lapful (Northumberland) (e.g. Newbigin 1933; 1935a; 1935b; 1936).

Since the 1970s more work has been undertaken in the region, emanating both from the universities and the independent sector, such by Colin Burgess and the members of the Northumberland Archaeological Group in Northumberland. In East Durham and Cleveland pre-War work was carried out by Charles Trechmann and Frank Elgee, but is not until the 1970s that efforts were directed to the North Pennines, with the work of Denis Coggins in Teesdale, and also of Arthur Raistrick. In the lower lying areas the Durham Archaeological Survey was the first extensive archaeological survey to tackle

the less immediately apparent remains of East Durham and Cleveland (Haselgrove et al 1988).

Today, the role of independent archaeologists continues to be of great significance; recent work of Stan Beckensall on rock art, and Tim Gates on aerial photography has been fundamental (e.g. Beckensall 2001; Gates 2004). Our understanding of the archaeology of the North Pennines has been transformed by the work of the Altogether Archaeology group (see www.altogetherarchaeology.org). In the south of the region, Tim Laurie has carried out major surveys of rock art and burnt mounds (Beckensall and Laurie 1998). Research based in universities, both local and further afield, is represented by the work of Clive Waddington and Anthony Harding in the Milfield Basin, and by Richard Bradley on the landscape context of rock art (Bradley 1996; Harding 1981; Waddington 1998a). Major fieldwork has also been undertaken under the auspices of other bodies, such as the Northumberland National Park Authority (eg Frodsham and Waddington 2004).

1.3 Key contributions, 2006 - 2017

There have been several key contributions to our understanding of the Neolithic and early Bronze Age in the North East since publication of the original NERRF in 2006. In addition to the results of new fieldwork (discussed below), two important syntheses are worthy of particular mention. These are the overviews provided by Passmore and Waddington (2012) (see also Waddington 2013, in press) focusing on the Milfield area, but including discussion of sites elsewhere in Northumberland. The second is the comprehensive synthesis of early Bronze Age burials by Fowler (2013) which presents an extremely useful exploration of Chalcolithic and early Bronze Age mortuary evidence from North-East England. The collation and presentation of so much data from some 150 sites across the region is a great contribution to Chalcolithic and Bronze Age studies in the north-east. It is also good to see data from the North-East being used to inform theoretical models, rather than simply being classified in accordance with models based on data from southern England.

Two important PhD theses completed over the past decade are *Ceramics of the Tyne-Firth Region, c3500-1500BC* by Dana Millson (Durham, 2013; see also Millson *et al* 2011), and *Pits and the architecture of deposition narratives of social practice in the neolithic of north-east England* by Ben Edwards (Durham, 2009).

Much important progress has been made with regard to chronology (Marshall & Waddington 2012). Bayesian modelling of all available radiocarbon dates, including many obtained in the years since production of the original NERRF assessment, has enabled the production of a quite sophisticated chronological framework for the Neolithic and early Bronze Age north-east, although this relies heavily on data from the Milfield area and must be subject to revision as new dates become available. The onset of the Neolithic is estimated to have occurred in 4080-3790 cal BC (95% probability), and probably 3900-3850 cal

BC (68% probability). The end of the Neolithic, based on the latest use of Grooved Ware, is estimated at 2570-2320 cal BC (95% probability) and probably 2550-2470 cal BC (68% probability). Further observations on chronology are included within the section on ceramics, below.

A number of recent fieldwork projects have made important contributions, and will be considered within the overview, below. These can be divided into two groups: those undertaken as commercially funded ventures and undertaken by commercial fieldwork units in advance of developments such as gravel quarries, housing estates or road schemes, and those designed as research projects and undertaken by universities and/or local groups.

Of the former, the most celebrated has been the work undertaken in advance of gravel quarrying in the Milfield Plain (eg Passmore & Waddington 2012). The results of this work, linked to research work in the same area by Waddington and others, means that the area is better understood in terms of Neolithic activity than anywhere else in our region. A key question is the extent to which Milfield really was special in the Neolithic, or whether other areas saw a similar level of activity that we have yet to identify. Elsewhere, the results of a few other developer-funded projects have begun to suggest that comparable activity to that at Milfield was underway elsewhere; Neolithic activity has recently been demonstrated at, for example, Lindisfarne, North Seaton, Morpeth, Felton and probably Cramlington, all as a result of developer-funded fieldwork, though evidence of such activity in County Durham remains almost non-existent. The potential implications of these new discoveries are considered under 'settlement and subsistence', below.

A few important stray finds have been made, such as the beaker inhumation in a cist near Rock disturbed by the plough in September 2017, the finds from which are currently undergoing analysis (Jessica Turner pers comm.), and occasional new discoveries of rock art, such as those by the Tynedale North of the Wall group in the little-studied 'wilderness' landscapes north of Hadrian's Wall. It is important that farmers are aware of someone in authority to whom they can report such things should they find any.

A number of significant research projects have been completed over the past decade. Waddington's work around Milfield has already been mentioned. The excavation of the Duddo stone circle was an important contribution, with perhaps surprising results (Edwards et al 2011). The re-excavation of the Kirkhaugh burial mound near Alston, from which a gold ornament had been recovered in 1935, recovered a matching ornament along with jet buttons and other objects, further emphasising the great importance of this unique site, now interpreted as the grave of one of the very first metalworkers in northern England (Fitzpatrick in prep).

The spectacular excavations of the early Bronze Age cairn that was being steadily destroyed by coastal erosion at Low Hauxley, and the splendid resulting publication that incorporates discussion of a number of earlier discoveries here within the context of a detailed palaeoenvironmental study of the surrounding landscape, is a very important recent contribution (Waddington and Bonsall 2016). The earliest burial at Low Hauxley is

probably just about contemporary with the Kirkhaugh burial, at about 2300 cal BC.

Lidar surveys in the North Pennines, undertaken by members of the Altogether Archaeology group and others, have resulted in many spectacular discoveries of settlements and field systems from Iron Age and Roman times, but few sites of earlier date. However, one particularly important Neolithic site has been discovered: a large henge at Allendale, in an area which previously contained no such monuments (Ainsworth 2015). Other possible henges have been recorded in Teesdale and Weardale, but these have yet to be checked on the ground.

The work of the Tynedale North of the Wall group in surveying the often ignored but fascinating archaeological landscapes north of Hadrian's Wall represents an important contribution. These can now be seen to be complex multi-period landscapes, visible elements of which (including cairns and rock art) extend back to Neolithic or early Bronze Age times.

Very important work has been completed by the ongoing Bradford Kaims Wetland Heritage Project, organised as part of the Bamburgh Research Project (see http://bamburghresearchproject.co.uk/?page_id=26). Much fascinating information has been recovered about human activity here, around an ancient lake near the village of Lucker, from Mesolithic times through into the Bronze Age. Much further work is planned, and, despite the absence of above-ground monuments of any kind, Bradford Kaims will probably soon come to be generally regarded as one of the most important Neolithic and early Bronze Age sites in our region.

While attention has focused largely on Northumberland over the past decade or so, a very important Neolithic settlement site was excavated in 2016 and 2017 by Steve Sherlock at the south-east extremity of our region, suggesting that further such sites must surely await discovery elsewhere, and reminding us not to focus too much on Milfield when considering the north-east Neolithic. This completely unexpected new discovery appears to be an early Neolithic house, located within a known complex of Neolithic and early Bronze Age ritual monuments at Street House, Loftus, Cleveland (Sherlock 2016).

In County Durham, a comprehensive archaeological assessment of the aggregate –producing areas (Hewitt 2011), which incorporates up-to-date overviews of the county's archaeology, has little to say about Neolithic and early Bronze Age settlement. This relative absence of settlement evidence in County Durham, in comparison to areas to north and south, remains, for the time being at least, something of a mystery.

As discussed in Section 6.5, below, the North-East contains some of Britain's most spectacular examples of prehistoric rock art. Recent years have seen some significant new discoveries, much very useful survey and synthesis, and some commendable attempts at 'explanation' (eg Beckensall 2001, 2009, 2012; Bradley 1997, 2009; Brown & Brown 2008; Mazel 2007; Oswald & Ainsworth 2010; Vyner 2007). However, the interpretation of rock art remains frustrated by a lack of information regarding chronology and context, and our

understanding of what the motifs may have 'meant' to those who made and experienced them is in some ways little advanced from that of George Tate who published the first overview of Northumberland's rock art back in 1865.

Finally, we should briefly mention the excavations undertaken by the Altogether Archaeology group at the splendid stone circle complex of Long Meg and her Daughters, over the regional boundary in Cumbria. This work was undertaken partly to investigate the role the site may have played in Neolithic cross-Pennine transport and communications, and the conclusion is that the site may well have acted as a kind of 'hub', linking the Irish Sea province with overland routes to Northumberland, Durham and Yorkshire (ASDU 2015; Frodsham in prep).

This brings us to the important observation that the North-East does not, and did not in the Neolithic, exist in isolation. Work on the fringes of our region, and indeed in some cases further afield, can be very relevant and must be taken into account when designing our Research Strategy. The research frameworks for adjacent areas (see below), and in some cases for areas within our region, should be taken into account when considering our own research priorities.

1.4 Existing research frameworks

The original NERRF (2006) made reference to the English Heritage Archaeology Division Research Agenda (English Heritage 1997), which presented research priorities based on those in Exploring our Past (English Heritage 1991). This document highlighted the need to study of processes of change reflecting the change and diversification of farming communities (c. 3,000-2,000 BC) as well as the shift from landscapes dominated by communal monuments to one of settlements and fields (c. 2,000-300 BC). Among the more specific topics considered to be national research priorities were prehistoric rock art and territories and tenure in the 4th and 3rd millennium BC. Although more up to date national research frameworks have been produced for several periods in recent years (a useful list of current frameworks is available at: historicengland.org.uk/research/support-and-collaboration/research-resources/research-frameworks/) there is no recent document covering national research priorities for the Neolithic and early Bronze Age. *Towards an agenda for Neolithic Studies* (Harding *et al* 1996) underlines seven main research themes, all of which remain relevant: the dynamics of the Mesolithic to Neolithic transition, regional patterning, local patterns of settlement and their relationship to monuments, improving the chronological framework, rock art, the Neolithic to Bronze Age transition, and artefact characterisation. A more recent paper by Paul Frodsham (2000) argues for a research framework to encompass 'Central Britain', stressing the links between northern England and southern Scotland.

Key documents from adjacent areas, such as the research frameworks for the north-west (Brennand 2006, 2007), Yorkshire (Roskams & Whyman 2005, 2007; see also the important Yorkshire synthesis by Manby *et al* 2003), and Scotland (Brophy & Sheridan 2012; Downes 2012; downloadable from

www.scottishheritagehub.com/node/1203) must be considered when setting our priorities for the north-east. The research frameworks for the Northumberland National Park (Young et al 2005) and the North Pennines (Frodsham 2017) are also relevant.

2. Overview of the resource assessment

2.1 Impacts

One of the most important factors in understanding the Neolithic and Early Bronze Age archaeology of the region is the issue of site preservation. The complex pattern of known sites is as much related to the influence of post-depositional factors as to the original distribution of prehistoric activity (Young 1994a). The region can be divided into two broad areas: uplands, where sites are more likely to be upstanding monuments, and lowlands, where sites more often survive as cropmarks or artefact scatters (Figure 13). Within this broad, bi-partite division, there are more localised zones of destruction. Perhaps the most significant destructive factor is the huge spread of settlement in the region. The growth of Newcastle, Gateshead, Sunderland, Consett and the towns of Teesside have smothered large areas of the lowland landscape. In East Durham, the exploitation of coalfields has also had a dramatic impact, leading to large-scale landscape disturbance and poor site preservation. In both upland and lowland areas there has been quarrying, gravel extraction and opencast mining. Much of this work is taking place on long-term planning consents and is thus outside the protective framework provided by PPG16. It potentially threatens several areas of high archaeological importance, particularly the Milfield Basin in north Northumberland. Recent projects, such as the Milfield-Geoarchaeology project and the Till-Tweed project, have created a management guidance framework based on bringing together geomorphological mapping of landforms and their archaeological associations (Passmore et al 2002). This has served to highlight the threats from gravel extraction in specific areas, and will act as a management tool for archaeological curators in the region.

The effects of agriculture, mainly ploughing, over the intervening millennia mean that many Neolithic settlement sites now have no surface trace, except occasionally as cropmarks. Three categories of Neolithic occupation site may be recognised based on surviving archaeological evidence. First are lithic scatters in the ploughsoil, such as that from New Bewick (Northumberland) (Waddington 2005b). These may represent permanent or semi-permanent occupation, or merely a brief single phase of activity. It is possible that more substantial remains may be found through the excavation of such sites, though due to the ephemeral nature of many Neolithic structures, the lithics may be all that survive. Such sites are found widely across the region.

A second category of site comprises clusters of pit features containing Neolithic objects. There are two basic forms of pit: burning (or hearth) pits, apparently used for cooking, and midden pits which are generally larger in

size with no evidence of in-situ burning (Waddington 1999, 2011). Such sites are noticeably clustered in and around the Milfield Basin, and are known from Coupland, Brand's Hill, Yeavering, Thirlings, Ewart, Woodbridge Farm, Milfield, Akeld and New Bewick (Harding 1981; Hope-Taylor 1977, 348-349; Miket 1976; Waddington 2000b; Waddington and Davies 2002). The reason for this clustering is uncertain; it may be a real phenomenon or merely a reflection of the intensive research there. It is possible that these are the only surviving elements of more substantial settlements, though this does not explain the bias in their distribution. The pottery from some pit complexes, such as Thirlings, ranges in date form early Neolithic to early Bronze Age, implying the sites were occupied, if perhaps intermittently, for a very long time, possibly in excess of a couple of thousand years.

The final group of Neolithic occupation sites are those with definite evidence for some kind of structure, such as Bolam Lake (Waddington and Davies 2002), Thirlings (Miket 1981), Milfield Village (Clive Waddington pers comm), Marygate, Holy Island (Lees 1997), and Street House, Loftus (Sherlock 2016). These sites have produced post- and stake-holes, some packed with stone, that at least imply some form of semi-permanent activity at the sites.

In addition to agriculture, a further land management issue with a bearing on site survival has been the twentieth-century expansion of forestry. Afforestation is mainly found in the north of the region (c. 80% in Northumberland). In total around 99,500 ha (11%) of the area is covered by forest and woodland. The major increase in planting began in the early 1930s and reached a peak between 1950 and 1960 (DEFRA 2002). Apart from Kielder Forest, much of this woodland cover is scattered and divided into thousands of woodland blocks, and this affects not only the survival of archaeological deposits, but also their visibility and management. In some places in north Northumberland, large numbers of lithics were recovered by Fritz Bertheli, who inspected vast areas as they were ploughed in preparation for afforestation (Hewitt 1995), but in most places no such work was undertaken.

The Otterburn Training Area, which occupies more than 23,000 hectares in Redesdale and Upper Coquetdale, within the Northumberland National Park, includes some very extensive and important archaeological landscapes, including cairns and other sites of Neolithic and early Bronze Age date. There are also smaller military raining areas within our region, such as Battle Hill on Cotherstone Moor, which includes much rock art. Although some damage has in the past befallen ancient monuments through military activity in these areas, the MoD is generally very good with regard to conservation, as demonstrated by the very comprehensive Otterburn Training Area Archaeological Management Plan. The archaeology of these upland landscapes is probably safer under the custody of the military than it would be had these areas been used primarily for the alternatives of agriculture or forestry.

A range of more localised destruction factors include increased agricultural drainage and the demand of water by the conurbations which has led to a lowering of water tables. In some areas this has had a significant impact on

the cycle of creation and destruction of peat, and the drying out of peat deposits is now a major issue, which in turn may significantly degrade the environmental archaeological resource.

Coastal erosion is another factor in site preservation; recent important work at Low Hauxley has been mentioned above. Continued monitoring of the coast is important, and is something that could usefully be done by volunteers. For a recent assessment of coastal erosion in Northumberland, see the reports by Tolan-Smith (2008) and Burn (2010).

2.2 Patterns of previous research

Site preservation, however, is not the only issue affecting the distribution of known sites. Our understanding of the archaeology is also fundamentally influenced by patterns of earlier research. Thus, one of the most extensively studied areas is the Milfield Basin in north Northumberland. Major excavation has been carried out there by a number of scholars, and the area has also been the subject of a PhD thesis and intensive fieldwork by Clive Waddington (Miket 1981; 1985b; Harding 1981; Waddington 1997a; 1997b; 1998a; 2000a). The combination of excellent crop mark evidence and an important range of monuments has led to the area becoming one of the best-understood archaeological landscapes in the country.

To the immediate south, the Cheviots and the Northumberland uplands, with their extensive upstanding remains, have also been the focus for research. There has been extensive aerial photography coverage by Tim Gates, who has also surveyed Hadrian's Wall corridor, the Otterburn training area, and the College Valley (Gates 1997; 1999; 2000). Extensive fieldwork has been carried out by RCHME (Topping & Pearson 2008), the Northumberland Archaeology Group, and the Northumberland National Park Authority. Work in Redesdale includes the major survey of the Otterburn Training Area by Beryl Charlton and John Day (Charlton and Day 1977), while Paul Frodsham has provided a useful overview of prehistoric Upper Coquetdale (Frodsham 2006).

The sandstone escarpment of the east flank of the Cheviots is home to most of the rock art in Northumberland. Although this has been subjected to extensive study by Stan Beckensall (2001), and a large number of flints has also been recovered from the area by Fritz Berthele, there has been little excavation here (Hewitt 1995).

The uplands of County Durham have seen less work, that of Rob Young in Weardale being a notable exception (Young 1987). In Teesdale, there has been extensive survey by Denis Coggins and Tim Laurie (Coggins 1986; Laurie 2004). Little work has focused in the lowlands of Durham, although the Durham Archaeological Survey carried out extensive field-walking in the area (Haselgrove et al 1988). That survey also extended into Cleveland, where Blaise Vyner has worked on sites along the very southern edge of the region close to the North York Moors (e.g. Vyner 1988a; 1988b; 1991).

The advent of PPG16 and developer-funded archaeology has had a limited impact on the earlier prehistory in the region, although there are signs that developer-funded work may be starting to tilt the focus slightly away form Milfield towards other parts of Northumberland where Neolithic and early Bronze Age pits have been recorded in places where such activity had not previously been suspected, such as at Morpeth, Felton and North Seaton. The absence of such sites from County Durham, for now at least, remains something of an enigma.

3. The Neolithic and early Bronze Age environment

In general, our understanding of the environment during the Neolithic and early Bronze Age remains essentially as outlined in NERRF 1, but this has been augmented through a small number of important palaeoenvironmental studies over recent years. These include work on the Milfield Basin (Passmore & Waddington 209, 2012), at Low Hauxley on the Northumberland coast (Waddington & Bonsall 2016), and at the remarkable ancient wetland site of Bradford Kaims, near Lucker, south of Bamburgh (eg Gardner et al 2015; see also www.bamburghresearchproject.co.uk).

Waddington (in press) has recently drawn attention to a possible link between rising sea-levels and the onset of the Neolithic in our region, suggesting that pressure on coastal agricultural communities on the European mainland, coupled with similar pressures on coastal mesolithic communities in our region, could have been significant factor in the spread of farming across the North Sea. He stresses, however, that no direct causal link has yet been established. Also, the period 4100 – 3800 cal BC was a relatively warm, dry period, which may also be of some significance to the local adoption of agriculture.

The Neolithic pollen record from Northumberland is varied. Some sequences, such as those from Fellend Moss and Steng Moss, show no evidence of human activity (Davies and Turner 1979, 801), while elsewhere crops were being grown (Tipping 1996, 27). At Swindon Hill, Drowning Flow and Bloody Moss there is early clearing of woodland and expansion of heathland (Moores 1998, 210; Young 2004b, 163). In valley bottoms and lowland areas, such as at Brownchesters Farm, Akeld Steads and Wooler, there is also evidence for forest clearance (Moores 1998, 210-211). At Brownchesters, cereal pollen is recorded in a very early context, suggesting possible cereal cultivation prior to 4000 cal BC. The elm decline, often dated to between 4300 and 4000 cal BC in our region, may also be indicative of early agriculture. More work is needed to clarify the implications of these early dates; for now the onset of farming in the north-east is best regarded as giving occurred in about 4000BC (as discussed below).

During the early Bronze Age there was a continued expansion of heathland and commensurate forest clearance (Moores and Passmore 1999, 24; Young 2004b, 165), along with increased crop production (Moores 1998, 245-247). The rate of clearance and use of cereals appears to increase through the

prehistoric period, with later clearances on a larger scale. Recent palaeoenvironmental work undertaken at Green Rigg, Birtley, in advance of a new windfarm, backs up the general picture of agricultural intensification during the Bronze Age (ASDU 2015).

Very few assemblages of plant macrofossils survive from the Neolithic. Significant examples are Thirlings and Whitton Hill in north Northumberland, both of which are dominated by hazelnuts, though there were also a few grains of naked barley (van der Veen 1982a; 1982b), and from ritual sites in the Milfield Basin, where emmer wheat was present in very small quantities.

Assemblages of animal bone from Neolithic sites are rare, though tiny amounts of bone were found at Ewart (Northumberland) (Miket 1981). Spot finds of wild animals include a red deer from the shore at Seaton Carew (Teesside) and a horn sheath from Ireshopeburn Moor (Co. Durham) (Stallibrass 1993; Young 1987).

Bronze Age animal remains (which could be of later Bronze Age date, but nevertheless give an indication of species present during the Neolithic and early Bronze Age) are known from the caves at Heathery Burn and Teesdale Cave (both Co. Durham), with a wide range of wild animals that includes boar, deer and possibly bear (Greenwell 1894; Simms 1974). Wild assemblages are also known from Jarrow Docks (Tyne and Wear), Wilton (Teesside), and Hartlepool submerged forest (Teesside) (Huntley and Stallibrass 1995, 118-119).

As with other bone assemblages, the preservation of human bone is regionally variable, with the acid soils of the upland areas of the Cheviots, the Northumbrian sandstone scarp, and the North Pennines being particularly adverse to the survival of bone. The earliest human skeletal material dates from early Bronze Age funerary contexts. Although cremation was common, inhumations have been recovered from a number of sites, such as How Tallon, Barningham Moor (Co. Durham), Low Hauxley (Northumberland) and Windmill Hill, Ingleby Barwick (Teesside).

4. Settlement and subsistence

Recent work within the North-East and elsewhere (eg in Cumbria and Scotland) demonstrates the considerable extent to which developments during the Neolithic have roots back in the Mesolithic. This is more complex than simply identifying the nature of the ‘transition’ between the two, although that is in itself a subject requiring much detailed study. It includes issues of mobility and the nature of settlement, and the continuity of activity at ‘special places’.

It is often thought that the Neolithic saw a significant transformation in the nature of the landscape from one that was wild and frequented by groups of hunter-gatherers to one that was increasingly tamed by early agriculturalists. This story, however, is a far from simple one (see, for example, Stevens and

Fuller 2012); the long process of transformation continued well into the Bronze Age.

Given the amount of work completed in the Milfield Basin, on both Mesolithic and Neolithic settlement, this is a key area for understanding the transition. However, despite all this work, things are still far from clear. Waddington (eg 2011) makes a convincing case for the transition involving a significant number of immigrants, arriving by boat as agricultural pioneers in about 4,000BC, bringing with them their own domestic stock and seed. He notes that the settlement throughout the Neolithic is focussed on sand and gravel terraces of river valleys and, to a lesser extent, on the coast; a pattern very similar to that recorded in East Anglia, for which much more data is available (Garrow 2007). This may well be true in the Milfield, but we currently have hardly any evidence on which to base such models for other parts of the North-East. Studying other areas, and this enabling informed comparisons with Milfield, must be a priority.

While accepting that the Milfield Neolithic may not be representative of what was going on elsewhere in the region, any assessment of the Neolithic in the north-east has to start here on account of the amount of work undertaken by Clive Waddington and others (eg Waddington 1999; Passmore & Waddington 2009 & 2012). There are six key settlement sites, all of which have been partially or wholly excavated: Thirlings (Miket et al 2008), Coupland (Waddington 1996, 1999) Yeavering (Hope-Taylor 1977; Ferrell 1990), Cheviot Quarry North, Cheviot Quarry South (Johnson & Waddington 2008), and Lanton Quarry (Waddington 2009, 2010). As the names of the latter three might suggest, these sites were excavated in advance of gravel quarrying. All six sites have been badly truncated by ploughing, but all have provided important evidence, mostly from burning (hearth or cooking) pits and midden ('rubbish') pits. These pits generally show little, if any, evidence for any kind of 'structured deposition', although recent work by Ben Edwards (discussed below in the section on pottery) raises intriguing questions about their use. They generally appear to have been infilled quite soon after being dug, and are usually thought to relate to the cooking of food and disposal of waste, perhaps relating to feasts or ceremonies. No doubt there were spiritual as well as practical aspects of such practices, and the future study of pit complexes, at Milfield and elsewhere, may yet have much to tell us.

Collectively, these sites have provided a vast amount of evidence of activity from the very early Neolithic through into the early Bronze Age. The earliest pits, from about 4,000 BC, include fragments of carinated bowls together with unambiguous evidence for the cultivation of emmer wheat and barley. At various places, pits have also produced evidence for the gathering of wild foods, such as hazelnuts, haws, wild cherry and blackberry, at different times during the Neolithic. The use of these wild resources demonstrates the presence of woodland in the local landscape.

Analysis of residues on carinated bowl sherds from Lanton and Cheviot Quarries has demonstrated that these were used to contain milk-based products, showing that dairying was being practiced from the very start of the Neolithic. Similar results have been obtained on residues from later Neolithic

pottery and beakers, suggesting that cattle farming was important throughout the Neolithic and into the early Bronze Age. Additionally, sherds of middle Neolithic impressed ware from Cheviot Quarry provide evidence of animal fat, plant foods, and beeswax (the latter suggesting that people collected honey, which could be used for sweetening, or in combination with barley to brew beer).

At Lanton Quarry at least seven triangular post-built structures, in association with midden pits and hearths, have been excavated. Carinated Bowl pottery together with hazelnut shells and a few cereal grains have been recovered from these structures which appear to represent a previously unrecorded type of early Neolithic 'house' unique to the north-east. A similar structure of the same date was excavated at Bolam Lake (Waddington & Davis 2002) and another, dating from the early Bronze Age, was found at Whitton Park in Milfield village (Waddington 2006). An early Neolithic circular, timber-built structure was recorded at Thirlings, although its precise form is not known. It would appear that people in the Milfield area were constructing a range of timber structures from the early Neolithic.

It is interesting to note that at Thirlings, Lanton Quarry, and the Cheviot Quarries all phases of the Neolithic ceramic sequence (from Carinated Bowls to Beakers) are represented, implying long-term occupation over several centuries. Whether this occupation was permanent or seasonal, and the extent to which this may have varied through time, is not currently known. The evidence for grain production and processing (as demonstrated, for example, by the presence of emmer wheat chaff at Cheviot Quarry North) certainly suggests a degree of sedentism, but there may have still been a considerable degree of mobility in the general settlement pattern.

A combination of archaeological and palaeoenvironmental research at Milfield suggests settlement throughout the Neolthic was concentrated on low-lying sand and gravel terraces within a couple of kilometres of a river. This is supported not only be evidence from excavated sites such as those discussed above, but also from lithic evidence arising from intensive campaigns of fieldwalking. It seems that the landscape of these terraces during the early Neolithic was one of mixed oak and hazel woodland, with patches of grassland and small cereal plots. At places within this patchwork, settlement sites, whether permanent or seasonal, were located. In addition to practicing a mixed agricultural regime, people no doubt continued to exploit the landscape's copious natural resources, including fish, game, fowl, eggs and a range of nuts and fruits. It seems probable that some people would have moved up into the fell sandstone hills with their cattle for the summer months; this may provide something of a context for the splendid rock art complexes (discussed below) which are such a characteristic feature of the north-east Neolithic.

As long ago as 1984, Colin Burgess, in his overview of prehistoric Northumberland (that despite so many subsequent developments still remains an important contribution), observed that an examination of the distribution of Neolithic axes throughout the north-east 'confirms that the Milfield Plain was an area of Neolithic settlement but dramatically reduces its relative

importance'. Other concentrations of axes occur in several places, including Coquetdale, Weardale and Upper Teesdale. There must be much potential for as yet unrecognised Milfield-type concentrations to survive in these and other places. That said, much of north-east remains a blank in terms of Neolithic settlement, with nothing other than axes and occasional lithic scatters recorded. In a recent overview of County Durham (Hewitt 2011) it is noted that: 'The actual nature and pattern of Neolithic occupation and use of the landscape has proven difficult to define, and there are as yet no definitive Neolithic settlement sites known in the county.'

An extraordinary recent discovery is what appears to be an early Neolithic house at Loftus, Cleveland. Excavated in 2016-17 by Steve Sherlock the structure lies very close to the Street House burial monument excavated by Blaise Vyner (see below). The 'house', radiocarbon dated to the early fourth millennium, seems to have been built of interwoven stakes, possibly covered with daub (Sherlock 2016). Important lithic and ceramic assemblages have been recovered from it, the former including more than 200 pieces, and the latter sherds from at least eight Carinated Bowls. Important examples of rock art have also been found in the immediate vicinity. Not only is this a crucially important site in its own right, but it serves to demonstrate that similar sites must still await discovery elsewhere in the North-East. Elsewhere in Cleveland, evidence of Neolithic occupation on Eston Nab is being investigated by the 'Ice and Fire' project (Adam Mead pers comm).

As noted above, a few recent developer-funded excavations have demonstrated Neolithic settlement at places in Northumberland where it hadn't previously been suspected. Some of these are very recent discoveries and analysis of finds and samples is still in progress. Examples include:

A stake-hole at Marygate, Lindisfarne, dated to 3700-3370 cal BC. (Archaeological Practice 1996).

A pit containing Clacton style Grooved Ware at St George's Hospital, Morpeth, dated to c3200 cal BC, a surprisingly early date for such pottery. (Waddington in press).

At Low Hauxley on the Northumberland coast, a pit containing hazelnut shells dated to c3800 cal BC, and a stone hearth dating from c3600 cal BC (Bonsall & Waddington 2016).

A pit containing Fengate style Impressed Ware, similar to examples from Thirlings, at Felton, near Rothbury (Rob Young pers comm).

Pits containing Neolithic and Chalcolithic pottery and lithics, in possible association with two large (as yet undated) palisaded enclosures and other potentially contemporary features, on a low hilltop north of the Wansbeck at North Seaton; excavated in summer 2017 (Richard Carlton pers comm).

A pit and a posthole containing charcoal, abundant charred hazelnut shell fragments, cereal grain, fired clay and calcined bone, excavated in summer 2017 during investigation of a later prehistoric site at Cramlington.

These samples are not yet dated, but appear Neolithic in character. (ASDU 2017; Peter Carne pers comm).

With the arrival of Beakers during the Chalcolithic, from about 2400BC, lithics distributions suggest that settlement expanded into more upland regions, though the valley terraces are not abandoned. Evidence of settlement, however, continues to be elusive throughout most of the region. The triangular post-built structure at Whitton Hill, Milfield, has already been mentioned; this is dated to 2120-1880 cal BC, and at present is the only such structure known from the early Bronze Age.

Elsewhere, on the lowlands, a few settlement sites are also known from lithic or pottery scatters, such as Ross Links and Matfen (Brewis and Buckley 1928; Turner 1989). At Ross Links, on the north side of Budle Bay, north-west of Bamburgh, a considerable quantity of Beaker sherds, along with lithics, was recovered from sand dunes in the 1920s. About 200 sherds of pottery were found, mostly of Beakers (representing a total of at least ten vessels), but also of food vessels (representing at least three vessels). Some of the Beakers were early all-over-cord vessels, probably dating from about 2,200 cal BC. None of the sherds exceeded two by one-and-a-half inches in size, and it was not possible to reconstruct any complete pots from the fragments; the corpus would therefore appear to be composed of sherds that were already broken when they were deposited here, rather than complete pots that were later smashed by natural processes. There was no sign of any burial and it is assumed that this pottery was from some form of domestic context, the nature of which is unclear.

Two pits containing many early (all-over-cord) Beaker sherds were excavated in 2017 in advance of development on a low hilltop, with extensive views in all directions, at North Seaton, above the north bank of the Wansbeck (Richard Carlton pers comm). Environmental analysis of samples from these pits and associated features should tell us much about the chronology and nature of activity on the site. Provisionally, it appears as though the nature of the pits bears close comparison with those on known Neolithic sites, for example in the Milfield plain, so it may be that these early Beakers were being used by essentially Neolithic communities, which perhaps should not come as a great surprise.

These examples serve to demonstrate, despite the current paucity of information, that there is much potential for future discoveries of Beaker period settlements from many different places throughout the north-east.

A further class of Bronze Age monument is the so-called 'burnt mound'. Consisting essentially of piles of fire-cracked stones adjacent to water troughs, these have had a range of functions (including cooking, brewing and a range of industrial tasks) ascribed to them, but most probably functioned as sweat lodges similar to those used by native North American communities. One example at Titlington, close to Beanley Moor in North Northumberland, has been excavated and dated to the early/middle Bronze Age (Topping 1998). Other burnt mounds have also been noted in Teesdale and Weardale,

and a large one was recorded by the Tynedale North of the Wall Group at Ravensheugh, though none of these has yet been subject to excavation. Several burnt mounds have also been recorded at Bradford Kaims (Gardner et al 2015), some of which date back to the very early Neolithic or late Mesolithic. The investigation of these is ongoing, and the results, linked to further investigation of the waterlogged deposits here that straddle the Neolithic and early Bronze Age, will be of very great importance.

It is quite possible that settlement throughout much of the Neolithic and early Bronze Age was essentially seasonal, with many of not most people continuing to more around the landscape in a seasonal cycle as they had for millennia during the preceding Mesolithic, perhaps congregating at communal places in the lowlands for the winter months. If this is so, it would account for our inability to find evidence of settlement, other than lithic scatters, throughout most of our region; people would have lived in relatively flimsy, temporary structures, perhaps tents, which would leave very little if any archaeological trace in places that have since been subject to centuries of ploughing. How arable agriculture would have fitted into such a mobile settlement pattern is not clear, but it is worth stressing that other than at Milfield there is very little evidence for Neolithic or Chalcolithic arable farming from our region; this only seems to have become commonplace from the middle Bronze Age. The transition occurs in the mid second millennium BC; the first mid Bronze Age farmstead to be excavated in the North East is Bracken Rigg in Upper Teesdale, where a single roundhouse, dated to about 1500 cal BC, stands in association with a single large, irregular field. Several middle and later Bronze Age farmsteads have now been excavated, but, as noted above, pinpointing earlier settlement sites is not easy, and much settlement may have been temporary, perhaps seasonal.

Numerous cairnfields survive on uplands from the Cheviots down to the North Pennines, and some of these contain burial cairns which, when excavated, are usually found to be early Bronze Age in date. A good example is Crawley Edge in Weardale, discussed below. It is often assumed, not unreasonably, that the surrounding cairnfields are of similar date, and are evidence of early Bronze Age farming, perhaps with timber roundhouses of which no surface trace remains. However, we can't currently be sure of the date of these cairnfields, and they could be of middle or later Bronze Age date, even when demonstrably earlier burial cairns survive within them. Alternatively, the cairnfields could be early, but a result of attempts to improve pasture for seasonal grazing rather than permanently occupied mixed farmsteads such as appear in the later Bronze Age, sometimes on the same sites (eg Houseledge and Standrop Rigg in the Cheviots).

The two most readily identifiable elements of these earliest agricultural landscapes are cairnfields and field systems. Evidence for both in the region is now essentially limited to the uplands of the Cheviots and the North Pennines. Cairns are a common element of the upland landscapes, and may have many dates and functions, from massive Neolithic round cairns to modern cairns built by hikers. It appears, however, that the majority are related to episodes of field clearance during the Bronze Age; large stones being removed from rocky areas as the land was opened up for agriculture. These groups of cairns can

vary in size and some of the largest, such as that at Chatton Sandyford (Northumberland), contain over 150 surviving examples (Jobey 1968). Crawley Edge, Stanhope (Co. Durham) is another site containing many surviving cairns (Young and Welfare 1992). The cairns themselves are generally relatively small in size but may be supplemented by stone banks seemingly made from cleared field stones which are also sometimes integrated into larger systems, as at Hindon Edge, Langleydale Common (Co. Durham). The process of creating cairns could be complex, and did not involve simply piling up field clearance stones. Excavation on a number of cairns surrounding the large cairn at Chatton Sandyford revealed evidence of pre-cairn activity, including burning and small pits. It is often not possible to make a simple distinction, on the basis of current appearance, between 'field clearance cairns' and 'burial cairns' – many of the later having presumably been built using stones removed from ploughed fields.

Chronologically later than the early cairnfields are the first field systems. Survey and excavation at Standrop Rigg, high up in the Breamish valley, has demonstrated a network of small, irregular fields surrounded by rubble walls in association with half a dozen roundhouses (Jobey 1983). Nearby, at Houseledge a roundhouse settlement was situated within a complex multi-phase landscape of clearance cairns, lynchets, fields and banks of clearance stone (Burgess 1980). There was evidence for terracing, which was overlain by the latest phases of the houses and fields; this may imply a late Neolithic date for the earliest phases of terracing. Back in the Breamish valley, at Plantation Camp, below Brough Law hillfort, three dates ranging from 1890–1410 cal BC were obtained for a system of stone-revetted terraces, suggesting a middle Bronze Age date (Frodsham & Waddington 2004). Wider evidence for the survival of prehistoric field systems in many places is revealed through aerial photography, such as Tim Gates' work which includes evidence of field systems, boundaries and probable stock control features. Although these are clearly prehistoric, they lack firm dating evidence at present (Gates 1983). Lidar surveys in the North Pennines have recorded very extensive later prehistoric fieldsystems in association with contemporary settlements; in some places in Weardale and Upper Teesdale there are clear remnants of Bronze Age precursors (Frodsham in prep). Recent surveys of complex multi-phase landscapes which appear to include evidence of Neolithic and early Bronze Age activity (eg cairnfields, cup-marked stones, burial cairns, stone circles, possible roundhouses) have been completed at Ravensheugh north of Hadrian's Wall (Altogether Archaeology 2014?), Burntridge Moor, Hexhamshire (Butcher & Maddison 2016), and at three places near Chatton Sandyford in north Northumberland: Willie Law (Deakin 2010), Whinny Hill and Lucker Moor (Deakin 2016).

Passmore and Waddington (2012) present the available radiocarbon dates for unenclosed Bronze Age settlements in Northumberland, none of which is demonstrably earlier than about 1500 cal BC (the earliest dates are for the lowland roundhouse at Lookout Plantation, near Milfield, but these range from 1930 to 1000BC, and the actual date of the original settlement here remains unproven). It seems that prior to the mid second millennium, settlement may well have retained a considerable degree of mobility, meaning that most

domestic structures were temporary and thus difficult if not impossible to recognise in the archaeological record – other than as flint scatters.

Working out how, and when, the farmsteads of the middle Bronze Age evolved from earlier cairnfields, and thus how the 'ancestral landscape' of the Neolithic and early Bronze Age evolved into the 'agricultural landscape' (which could equally well be termed the 'age of roundhouses') of later prehistory, with permanently occupied farmsteads even quite high up in the hills, remains something of a research priority. Ashmore (2004) estimates the construction of roundhouse settlements in Scotland to have begun in 1800-1700 cal BC, and this may well prove to be the case for north-east England once further sites here have been dated. However, there is one (as yet unpublished) site that suggests roundhouse origins could be somewhat earlier. This is Kidlandlee Dean, high up on Clennell Street close to the Anglo-Scottish border, where a roundhouse may have been constructed as early as 2000 cal BC (Rachel Pope pers comm, quoted in Waddington & Passmore 2016). If correct, this may provide something of a context for the three potentially early dates noted above for agricultural terraces in the nearby Breamish Valley.

One further early Bronze Age site to consider, which in the basis of current evidence appears unique in our region, is the earthwork enclosure at Mountjoy, 1km south-east of Durham city (Brogan & Hodgson 2011). This poorly understood site was only partially excavated but appears most likely to have been a large enclosure covering at least 0.75 hectares, with massive partially timber-revetted encircling ditches, considered by its excavators on the basis of radiocarbon dates to have been constructed in 1700-1500 cal BC and to have been abandoned some three centuries later. Its purpose, whether domestic, ceremonial or a bit of both, is not clear. Finds include lithics of apparently Mesolithic and/or early Neolithic date, which could be evidence of earlier activity on the site. It may be, therefore, that the site was occupied, albeit perhaps intermittently, throughout the Neolithic and early Bronze Age, prior to the digging of the enclosure ditches. As well as being fascinating in its own right, the Mountjoy enclosure serves to remind us that similar sites could yet await discovery elsewhere in our region.

5. Ceremonial monuments

5.1 Early Neolithic enclosures

Al Oswald is producing a comprehensive assessment of probable early Neolithic enclosures in northern England (Oswald in prep). There are very few confirmed examples in the north-east. Probable examples include what appears to be a substantial causewayed enclosure measuring 106 by 78 metres surviving as a cropmark at North Flodden, 2km north-west of Milfield village (Gates and Palmer 2004), and an apparently segmented enclosure beneath the Roman fort at South Shields (Hodgson et al 2001). When the latter was partially excavated no finds were made from within the ditch, but the structure was sealed beneath soil dated to the late 4th millennium cal BC. A further possible example lies buried beneath modern housing at Heddon-on-

the-Wall; here, a cache of seven fragmentary (perhaps deliberately broken) polished axes, apparently of Cumbrian tuff, was recovered from what appears to have been a section of ditch (Sockett 1971, Burgess 1984, 140).

Probable Neolithic enclosures are more common to the west in Cumbria, where half a dozen upland examples have been recorded, some only very recently. This suggests that as yet unrecognised examples may survive in the north-east, perhaps concealed beneath later sites such as Iron Age hillforts. In a review of early Neolithic enclosures in northern Britain, Waddington outlined the diversity in their form, placing them in a nationwide context (Waddington 2001). A contender is Harehaugh Hill, at a strategic landscape location in Upper Coquetdale (Waddington, Blood and Crow 1998), where a Neolithic bank was found in addition to the later multivallate Iron Age defences. Charcoal from beneath the bank had a radiocarbon date of 3,360- 2,920 cal BC, and two Neolithic flints were recovered from rabbit burrows within the circuit of this early bank. Waddington has also suggested that the enclosures on the promontory at Roughting Lynn and at Salter's Nick, Shaftoe Crags (Davies 1995, 63) could be Neolithic. Humbledon Hill, given its location at the north-east corner of the Cheviots overlooking the Milfield Plain, must also be a contender; its stone-built outer circuit, as yet undated, could well be older than the main hillfort rampart.

To the south, in County Durham, what appears to be a causewayed enclosure survives as a crop mark at Hastings Hill, Sunderland (Newman 1976); this later became the focus for a cursus and possibly other structures. A couple of kilometres east of Hastings Hill, an enclosure with concentric ditches has been recorded at Humbledon Hill (Hale and Still 2003). Another apparent Neolithic enclosure has been recorded from the air at North Lodge, Chester-le-Street (Vyner 2000; Hale and Still 2003). A possible example has also been recorded at Easington Lane (ASDU 2008), adjacent to a large rectilinear enclosure with sides more than 100 metres in length that has been dated to the mid fourth millennium cal BC (TWM 2008).

These sites collectively suggest that there was a tradition of constructing enclosures in the early Neolithic north-east, even if they do not conform to the standard ‘causewayed enclosure’ typology of southern Britain. They may have functioned primarily as communal gathering places for dispersed communities, possibly fulfilling a range of functions as has been suggested for the enclosures of southern England. However, until some investigation of them is undertaken it will not be possible to say much more.

5.2 Neolithic: death and burial

The archaeology of Neolithic burial monuments is characterised by a diversity of types of structure, including long cairns, chambered cairns, round cairns and mortuary enclosures (Masters 1984; Vyner 1986). The impressive long cairn at Bellshiel Law, high above Redesdale, is over 110m long, and despite partial excavation in the 1930s, it is still poorly understood (Newbigin 1936). A smaller long cairn in Tynedale, the Devil's Lapful, was also examined in the

1930s (Newbigin 1935a), but with similarly inconclusive results. Other long cairns include Dod Hill (Gates 1982) and the recently excavated Scald Hill (Aylett and Miket 2003). A further long cairn was identified and partially excavated by the Coquetdale Community Archaeology project close to the hillfort (and possible Neolithic enclosure) at Harehaugh; a cist, probably secondary, was found within it, but nothing datable was recovered.

Although traditionally identified as a long cairn, recent investigation at Dour Hill, Redesdale, has recorded corbelled chambers, suggesting it was actually a form of chambered tomb (Waddington, Godfrey and Bell 1998). A similar chambered cairn lies just outside the region on Great Ayton Moor (Hayes 1967). There are no confirmed Neolithic long barrows in County Durham, although a couple of possible examples have been recorded.

The Street House 'long cairn' at Loftus in Cleveland, at the south-east corner of the north-east region, is a monument with no known parallel elsewhere within the region; its closest parallels are to the south in Yorkshire and Lincolnshire (Vyner 1984). It is worth noting that it was only found because of an overlying (and much later) round cairn, so similar sites elsewhere without overlying cairns may yet await discovery. Excavated by Blaise Vyner in 1979-81, it consisted originally of a façade of large oak posts, behind which was a timber mortuary chamber within which several bodies (or parts of bodies) were lain, behind which was a stone-kerbed rectangular mortuary enclosure. The façade and chamber were burnt, after which the complex was sealed beneath a low trapezoidal cairn. The site is radiocarbon dated to the first half of the fourth millennium, possibly as early as 3800 calBC. The deposition of twenty-one early Bronze age jet buttons, interpreted by the excavator as a probable votive offering, suggests that the site retained some significance for a very long time; a suggestion further supported by the presence of an overlying early Bronze Age burial cairn. The site lies within a fascinating landscape containing an early Neolithic 'house' and the co-called 'wossit' (both described elsewhere in this chapter); several Bronze Age cairns lie in the immediate vicinity and lithics recovered from fieldwalking demonstrate much activity during the Neolithic and early Bronze Age.

Round cairns of certain Neolithic date include those at Broomridge (Northumberland) and Copt Hill (Tyne and Wear), both of which are in stunning locations commanding vast vistas, an observation which is probably not without significance. At Broomridge, a small cairn excavated by Greenwell was found to overlie what seems to have been a cremation deposit (possibly on the site of the original pyre) containing nearly 200 sherds of early Neolithic Carinated Ware. The interpretation of this site is in many ways problematic (Edwards 2009), but there can be no doubt that it is of early Neolithic date. At present it is unique within our region, though of course there is no way of knowing without excavation how many comparable deposits may survive beneath other, unexcavated round mounds. At Copt Hill, a large mound containing at least eight early Bronze Age burials overlay a Neolithic mortuary chamber, measuring c10 by 1.8 metres and aligned east-west, within which were several inhumations; the chamber appears to have been deliberately burnt prior to the construction of the mound.

A further apparently unique site worthy of brief mention is that at Lilburn Hill, where a series of distinct cremations was found in association with a boulder decorated with a horned spiral motif and other markings (Moffat 1885). It is not possible to know the original form or the chronology of this structure, but it was clearly a Neolithic burial monument of some kind.

A pit below a small round cairn on Chatton Sandyford Moor (Northumberland) has been dated to 3800-3370 cal BC; this may well have been a burial monument, but no evidence of a body survived in the acid soil. Some substantial round mounds may also be Neolithic in date; for example, the Poind and His Man in Belsay, and several large cairns in Upper Coquetdale, for example on Simonside, Thirl Moor and Crigdon Hill (all in Northumberland), though this must remain speculation until tested by excavation (Frodsham 2006).

Other contenders as possible Neolithic burial monuments include the substantial mound at Dewley Hill, Throckley (Tyne and Wear), surrounded by a concentric cropmark ditch, and Round Hill in the lower Tees valley close to Ingleby Barwick (Vyner 2000, 103). Crop marks of possible mortuary enclosures have been photographed at Ewart Park and Wark-on-Tweed (Northumberland). There is also evidence for a flat cremation cemetery associated with Grooved Ware at Yeavering. A single inhumation burial is known from Carr House Sands, Hartlepool, dated to c3500 cal BC, but this appears to exist in splendid isolation (Waughman et al 2005).

The recent discovery of a cremation cemetery at Lanton Quarry, Milfield, is an important development, suggesting that similar cemeteries, with no above-ground trace, may survive elsewhere. The Lanton cemetery included at least 16 cremations within half-a-dozen pits, four of which appear to have held fre-standing marker posts of some kind (Waddington in press). Two cremations from one of the pits with a marker-post were dated to c3000 cal BC, another, from an unmarked pit, to c2500 cal BC. Together, these dates suggest the site may have been used for burial, albeit perhaps intermittently, over several centuries.

5.3 Later Neolithic and early Bronze Age ritual/ceremonial monuments

Only a single certain example of a cursus is known from our region, that in association with a probable enclosure at Hasting Hill. Blaise Vyner has noted another apparent example, showing up quite clearly on an air photograph, adjacent to the burial mound at Copt Hill (Edwards 20??). Many cursuses have been recorded north and south of our region, so why so few are known here is something of a mystery.

Several henges (the label ‘henge’ is now of debatable value, including as it does a bewildering array of banked and ditched circular sites) of Neolithic date are known, most in the Milfield Basin (e.g. Harding 1981; Lee and Harding 1987). Waddington's excavations at Coupland dated an underlying early Neolithic settlement on the site to c3600 cal BC, but failed to date the henge itself, though a date of c1750 cal BC from near the top of the backfilled ditch

suggests it may well have been abandoned by this time (Waddington 1999). This is perhaps the closest thing to a 'classic' henge known from the region, being much larger than all the other so-called henges at Milfield.

The smaller 'henges' at Milfield, of which nine are aligned roughly north-south in a linear band some 6km long on gravel terraces to the west of the Till, are all of similar size, averaging about 25 metres in diameter. They are thus much smaller than the Coupland henge and quite possibly served a completely different purpose. They vary in form, but most seem to have contained timber circles. Three of them (Milfield South, Milfield North and Whitton Hill) have been dated. Collectively, the available dates suggest initial construction perhaps a century or so prior to 2000 cal BC. They are therefore not Neolithic but date to the Chalcolithic or early Bronze Age. Waddington (1999) has suggested they could have functioned together as some kind of processional way, beginning in the north and ending at Yeavering in the south. This idea is perhaps leant support by the presence of the 'droveway' that passes along this alignment through the centre of the Coupland henge; however, this feature remains undated and demonstration of a possible functional relationship between it and the henges must await further fieldwork.

The small henges at Milfield represent the largest concentration of such monuments anywhere, but, for now at least, their purpose remains enigmatic. The presence of apparently contemporary pit alignments within the Milfield complex (eg at Milfield North and Ewart) introduces a further complication. These could have functioned primarily as 'practical' boundaries, or may have been primarily ceremonial, linked in some way to the henges.

On the subject of the dating of henges, it is worth noting the recently excavated site at Dryburn, near Garrigill on Alston Moor, at the heart of the North Pennines. This is just over the county boundary in Cumbria, but lies at a 'crossroads' adjacent to main routes linking the Eden Valley, Teesdale, Weardale and South Tynedale. Recent evaluation of the site by the Altogether Archaeology project in partnership with Durham University provided two dates, one from the primary fill of the outer ditch, 2200-2030 cal BC, and one from a deposit sealed beneath this ditch's outer bank, 2280-2050 cal BC (ASDU 2016). The Dryburn 'henge' therefore appears to be contemporary with the Milfield henges. It certainly seems as though henge-type monuments were being built in our region at places other than Milfield during the Beaker period; see also the Street House 'wossit' discussed below.

Other possible henges north of the Tyne are known at Tynemouth (Stevenson 1998) and Ewesley Station, 1km south-east of Fontburn Reservoir (though the well-preserved earthwork here could be of later prehistoric date). In County Durham a possible henge at North Lodge, Chester-le-Street, has been recorded as a cropmark and subjected to geophysical survey (Vyner 2000, 103; ASUD 2000); it too may be of later prehistoric rather than Neolithic date. Recent lidar surveys in the North Pennines have discovered a probable large henge at Allendale, and other possible examples near Wolsingham in Weardale and at Cotherstone in Teesdale (Ainsworth 2015; Frodsham in prep). A recently discovered possible henge on Eston Nab, Cleveland, c90

metres in diameter, is currently being investigated by the ‘Ice and Fire’ project (Adam Mead, pers comm.).

The Street House ‘wossit’ (Loftus, Cleveland), excavated by Blaise Vyner in 1984-86, proved to be curious palisaded monument dating from about 2100 cal BC. It consisted of a discontinuous subcircular ring of substantial posts set in ditches, apparently graded with the lowest posts to the east, surrounding a central area containing two large upright posts set within a ring of stone rubble. Although often interpreted as a mortuary enclosure, its excavator now sees it as a kind of dry-land equivalent of the near-contemporary but much more famous ‘Seahenge’ monument from Holme-next-the-Sea, Norfolk, which consisted of an inverted tree trunk set within a circular palisade (Vyner 1988 & pers comm). At some stage, presumably within a generation or so of its original construction as the timbers would not have survived any longer than this and there is no evidence of their replacement, the site was dismantled and the timbers apparently burned on site, after which the central pit and palisade ditches were infilled with rubble. Perhaps three or four centuries later, at least two cremations in collared urns were buried here, and further rubble, including several cupmarked stones, was placed over the backfilled central pit and palisade trenches; this later activity suggests the site retained considerable ritual significance to local communities many generations after the dismantling of the original timber structure.

The range of megalithic stone settings includes circles, four-posters, rows, and individual standing stones. In Northumberland, several stone circles are known, including Threestoneburn, Hethpool and Duddo, though none is comparable in size to the larger examples from Cumbria and elsewhere. Little work has been carried out on these sites, but an important recent excavation at Duddo suggests a date of 2140-1980 cal BC for the erection of the stones (Edwards et al 2011); this is probably a few centuries later than many would have forecast, making the site early Bronze Age, rather than Neolithic. Threestoneburn was partially excavated by George Tate in the 1850s, and recently surveyed (Tate 1863b, 452; Waddington and Williams 2002). Survey by Pete Topping (1981) suggests there may have been two circles at Hethpool, but subsequent disturbance makes it impossible to be sure on the basis of surface evidence alone. Hethpool and Threestoneburn may have been located in relation to key routes into the Cheviots (Topping 1997, 120), just as several of the great Cumbrian stone circles are thought to relate to routes into the heart of the Lake District. Few stone circles are recorded in County Durham. One stands on Barningham Moor at the head of Osmonds Gill, overlooking a number of rock art sites and on the same ridge line as several major burial cairns, including How Tallon to the east. A smaller stone circle also stands on the watershed between Lunedale and the Eden Valley. A circle was also recorded at Eggleston, possibly at a key location relating to a main route between Teesdale and Weardale, and although the stones were removed in the 19th century, recent geophysical survey has identified its probable location (ASUD 2001).

Other small stone circles include the sites on Cartington Moor, Fontburn, Whinny Hill, Lucker Moor and Dod Law (Frodsham 2006; Moir 2016). Without excavation it is usually impossible to be sure of the original form, never mind

the function, of these sites. Like Duddo, they are probably early Bronze Age in date, presumably acting as ceremonial foci for people who may only have resided in their vicinity on a seasonal basis.

Two well-preserved four-posters are also known from Northumberland: the Goatstones in Bellingham, and the Three Kings in Kielder Forest. One of the stones at the Goatstones has sixteen well-preserved cup marks. A slight rise within the centre of the site may be the remains of a burial cairn. The Three Kings, excavated by Aubrey Burl in 1971, contained a central burial cairn (Burl and Jones 1972). The two stones near Haltwhistle known as the Mare and Foal may originally have been a four-poster.

The best surviving example of a stone row in our region is the Five King's standing stones, near Holystone Grange, one of which was removed in the 19th century for use as a gatepost (Dixon 1903; Frodsham 2006). This could be Neolithic or early Bronze Age in origin. The original purpose of such rows is not known.

Isolated standing stones are quite numerous; over 60 are recorded in Northumberland alone. They have a mainly lowland distribution. Dating such monuments is not easy, especially as there have been no recent excavations. Several stones have simple rock art carved onto them, including the stones at Matfen, Ingoe, Swinburn, Chollerton and Lilburn.

Although often thought of as predominantly Iron Age, there is increasing evidence that some pit-alignments are Neolithic. For example, the double pit alignment at Milfield North contained Grooved Ware sherds low down in its stratigraphy (Harding 1981), as did the single alignments at Ewart (Miket 1981). Away from Milfield, an alignment of five postholes at Green Rigg, Birtley, discovered during investigations in advance of the construction of a wind farm, has been dated to 2866-2578 cal BC. The lack of associated features or artifacts, and the limited scale of the investigations, means we can’t be sure of the original purpose of these pits; the report notes that they could be ‘part of a simple boundary, but they could relate to another structure of which no further evidence was identified’ (ASDU 2015). It is possible that they could be part of a potentially extensive later Neolithic boundary system, although the fact that no sign of similar features was noted elsewhere during the investigation would seem to argue against such an interpretation.

A further group of monuments of potential late Neolithic and early Bronze Age date to consider are the cross-ridge boundaries of the Cleveland Hills. These boundaries can be of continuous bank-and-ditch construction, or they can be broken by a series of causeways. There is no direct dating evidence from the boundaries themselves, but association with burial mounds has led Blaise Vyner to suggest an origin in the Early Bronze Age (Vyner 1995b).

5.4 Chalcolithic and early Bronze Age burial monuments

A bewildering array of burial monuments is known from the Chalcolithic and early Bronze Age, beginning in about 2400BC and running through to perhaps

1600BC. Sometimes grouped together simply as ‘cairns’ or ‘barrows’, and often regarded as simple burial monuments for individual burials (albeit with a few secondary burials in some cases) the recent synthesis by Chris Fowler (Fowler 2013; see also Fowler & Wilkin 2016) highlights the huge complexity demonstrated in the structure these monuments and the range of funerary practices employed (including a mix of inhumation and cremation). Fowler analyses data from 150 excavated sites from throughout the region (see also Young 1980 for a corpus of sites in County Durham). Since publication of Fowler’s synthesis, two very important excavations have taken place; one of an essentially very simple single-phase site, the other quite the opposite.

The earliest Chalcolithic burials incorporate beakers, and quite possibly the earliest example in our region is that at Kirkhaugh near Alston in the South Tyne valley. Although not scientifically dated, it must be from a century either side of 2350BC. Originally excavated in 1935 by Herbert Maryon, it was further investigated by the Altogether Archaeology project under the direction of Andrew Fitzpatrick in 2014 (Maryon 1936, Fitzpatrick in prep). The grave appears to be that of an early metalworker and is comparable with that of the celebrated Amesbury Archer from near Stonehenge (Fitzpatrick 2013). Unfortunately, no bones or teeth were recovered form the site, meaning the kind of analysis undertaken on the Amesbury Archer’s skeleton has not been possible. However, the finds assemblage is similar to that from Amesbury, including an early form of beaker decorated with all-over-cord impressions, a pair of beautiful gold hair tress rings, exquisitely made barbed-and-tanged arrowheads, jet buttons (possibly the earliest known examples anywhere) and a ‘cushion stone’ (a portable anvil used for working gold and copper). It seems the individual buried at Kirkhaugh was a metal prospector, probably passing through the area in search of local reserves of copper and gold when he died. He was given an appropriate burial, presumably by his travelling colleagues, and the site was then left untouched – unlike many other beaker burials that became foci for complex monuments, as we are about to see.

In contrast to the simple structure of the Kirkhaugh cairn, the second recent excavation is of an altogether more complex site which saw many burials over several centuries, at Low Hauxley, on the coast a couple of kilometres south of Amble and the Coquet estuary. The spectacular excavation, undertaken in 2014, was the culmination of several campaigns of fieldwork stretching back over several years, as the site was increasingly lost to coastal erosion. The results of all this work are brought together in a splendid publication (Waddington and Bonsall 2016) covering the burial cairn within its local landscape setting. The earliest burial on the site was a beaker inhumation in a cist, probably dating from 2370-2130 cal BC, making the earliest dated beaker burial from the region (though Kirkhaugh may well be a century or two earlier). Two further inhumations in cists were added, after which the overlying stone cairn was added. This cairn was later enlarged on two occasions, and several cremations were added to it the latest of which is dated to 1890-1690 cal BC. The site may therefore have been in use as a burial site for about half a millennium.

Prehistoric cairns were especially susceptible to investigation by early antiquarians. While some workers at least documented which cairns and

barrows they investigated, many more were unfortunately ‘dug’ without any record. Some of the most important early archaeological work of this kind was carried out by William Greenwell (Kinnes and Longworth 1985). To further emphasise the range and complexity of these sites, it is appropriate to briefly consider a few examples here.

At Copt Hill (Haughton-le-Spring) a large round cairn was ‘excavated’ (in a single day, 20th Sept 1877) by Greenwell and T.W. Robinson. It was found to overlie what appears to have been a Neolithic mortuary chamber, containing several inhumations. Within the structure of the overlying mound, eight early Bronze Age burials were found: four cremations and four inhumations. Among the inhumations was a child in a stone cist, and an adult accompanied by a food vessel. The cremations included one within a collared urn. Near the summit of the mound, to complete a complex story extending over perhaps three millennia, was an apparently Anglo-Saxon inhumation within a stone cist. This is another site that demonstrates the complexity of what may appear on the surface to be ‘simple’ Bronze Age burial mounds.

At Hasting Hill, Sunderland, on a site overlooking the only certain cursus in our region and a putative causewayed enclosure, a round barrow was excavated by Charles Trechmann in 1911 and found to contain several separate burials (Trechmann 1914). The finds have been subjected to recent analysis and some of the burials have been dated (Fowler 2013). The primary burial was an adult male in a cist with a beaker, dated to 2194-1977BC. The cairn, which could be a century or two later in date than the first burial, contained three further inhumations (one male, one female and one-year-old infant dated to 1931-1756BC), two cremations, and other features such as empty cists that suggested other burials had been present. Some of the later burials were accompanied by food vessels. What is particularly intriguing is that the primary burial and two others were laid to rest in a distinctive way, almost unknown elsewhere, with their hands in front of their faces, suggesting continuity over perhaps several generations. This is an intriguing site in many ways, that demands further study.

At Blawearie, in a sublime landscape setting high on the Fell Sandstone hills east of the Till, a large and complex cairn was first investigated by Canon Greenwell in 1865 and re-examined by Hewitt and Beckensall in the mid 1980s (Hewitt and Beckensall 1996). In its final phase the monument consisted of a sub-circular cairn of rounded stones contained by a kerb of large upright slabs about 10 metres in diameter, within which were half a dozen cists which may originally have held crouched inhumations, though no sign of any skeletons survived in the acid soil. A food vessel was found in once of the cists, and a hundred jet beads, presumably deposited as a necklace, were recovered from another. Five of the cists were arranged in the western half of the monument; there was also a central cist that contained ‘a vessel’, but this had been robbed prior to Greenwell’s excavations and no further details are available.

Some of the cists used slabs removed from the kerb, suggesting that the kerb may have been in place for some time prior to the construction of the cists. At a later time, two pits were dug: one, just outside the line of the kerb n the

south-west, seems to have been the site of a cremation pyre; the other, just inside the line of the kerb in the south, contained an inverted food vessel urn within which was cremated bone from two adults. Ten small satellite cairns were built to the east of the main monument, one of which was excavated and found to overlie a probable cremation pyre. At the centre of the monument was a large pit, which may have been the site of a large and potentially ancient oak tree; oak charcoal was spread across the centre of the site, sealed beneath the later cairn. It is quite possible that the kerb was originally constructed around either a living tree, or the pit resulting from the removal of a tree. An adjacent pit seems to have held a large freestanding post, which just might have been an inverted tree comparable to the well-known example at 'Seahenge' in Norfolk, and possibly also the Street House 'wossit' described above. At a later date, presumably after the 'post' had either rotted or been removed, the central cist was constructed here. The concept of the 'sacred tree', with its roots set deep in the ground and its branches heading up towards the heavens, is deeply rooted in many cultures throughout the world, and there is every reason to believe that trees, especially when integrated into ritual monuments as seems to have happened at Blawearie, were of very great sacred significance to Neolithic and early Bronze Age people. Unfortunately, no radiocarbon dates are available to help establish the chronology of events at Blawearie, but this is clearly a complex monument that was presumably of great significance to several generations during the early Bronze Age.

Recent excavations on two cairns at Turf Knowe, on Ingram Farm in the Cheviots, with beautiful views down the Beamish Valley, have also revealed complex sequences (ASDU 1995, 1996, 1997; Frodsham and Waddington 2004; Carne in prep). Turf Knowe North seems to have begun life as an unremarkable early Bronze Age burial cairn, some 4 metres in diameter, with a central cist overlain by a huge capstone. This cist seems to have been accessed on more than one occasion; apparently unaccompanied cremations within it of an adult and an infant are dated to 2340-1950 and 1840-1680 cal BC. Also within the cist was a cremated adult female with a splendid food vessel and jet bead necklace, dated to 1750-1530 cal BC. At some point, after a period during which the site seems to have been ploughed, the cairn was enlarged within a new kerb some 10 metres in diameter, incorporating a remarkably well built cist within which were at least three (as yet undated) unaccompanied cremations. Several cremations were added to the body of the cairn, two of which are dated to 2130-1880 and 1880-1620 cal BC. Of particular interest is a cremated infant buried within an inverted food vessel urn, placed within a shallow pit dug into the north-east side of the cairn. Analysis of skull fragment suggests this child had suffered from meningitis which may well have contributed to his or her death. But why this particular child should have received such a special burial when many other others must have died at such a tender age is completely unknown. And what makes it even stranger is that the cremation is dated to 2490-2200 cal BC, almost certainly too early for the pot in which it was buried. If the date is reliable (and there is no reason to doubt it) then the interpretation of this particular burial requires some serious thought.

The enlargement of cairns and the addition of new kerbs is also recorded elsewhere. George Jobey's excavations on a group of cairns at Chatton Sandyford recorded a series of burials in the central cairn, the kerb of which was probably a later addition (Jobey 1968). At Cobden Sike, a large cairn was found to cover an earlier example; both had been edged with kerb stones (Gates 1979).

Turf Knowe South, thought at first to be a field-clearance cairn, turned out to be a 'tri-radial cairn' (see below) with arms about 6 metres long and a metre wide. The excavators believed, quite reasonably based on the stratigraphy of the site, that this was the monument's original form, though it remains a possibility that an original round cairn could have been remodelled a later date. Two cremations, dated at 2130-1870 and 2030-1770 cal BC, were found in a cist between the cairn's north and south-west arms, and an intact food vessel (of broadly similar date) was found just outside the cist, as though it had been removed from the cist and carefully placed here in antiquity. Within the cist was an iron spearhead, which could not possibly have existed at the time of the cremations. Intriguingly, an early medieval date was obtained from a spread of charcoal close to the cist; the spearhead could be of this date. The suggestion is that some sort of activity took place here in early medieval times, though no burial from this period was found. A short distance south-west of the cist was a pit containing a crushed, fragmentary food vessel and a flint implement thought to be a sickle blade; a date of 1390-1120 cal BC, which seems too late for the food vessel, was obtained for the fill of the pit.

The excavation of Turf Knowe South roughly coincided with the recognition of several apparently similar monuments elsewhere in Northumberland, all of which are now classified as 'tri-radial cairns'. They were first recognised by Bill Ford and a team from the Borders Archaeological Society, who excavated an example at Ray Sunniside (Ford et al 2002). A burnt area sealed beneath one of the arms gave a date of c2600 cal BC; however, this does not necessarily date the structure, which could be later. Eight tri-radials have been identified at Lordenshaws, four at Hartheugh and three at Ray Sunniside; other examples are known at Brands Hill, Heddon Hill and Turf Knowe. Some authorities see the structures as probable sheep shelters of post-medieval date, in some cases (such as at Turf Knowe South) reusing stone from prehistoric cairns. There is a very good example at Strands Gill, above Holwick in Upper Teesdale, where what is clearly a tri-radial sheep stell overlies a much earlier circular structure that could be the kerb of a dismantled burial cairn. For now the status of these tri-radial monuments remains controversial and further work is needed to assess their chronology and function.

At Wether Hill, on the same farm as Turf Knowe, excavations by the Northumberland Archaeology Group (Topping 2001, 2004) uncovered a pit containing a timber box or cist, within which were two beakers, one of which was complete. Three dates for the timber cist span the period 2335-1886 cal BC. Whether the site was marked on the surface in any way is not known, but people must have been aware of its presence as the pit was reopened at a later date and a stone cist set above the timber one. This contained three fragmentary food vessels, one of which was dated through a barley grain

incorporated within its fabric to 2020-1745 cal BC. This site had no surface trace and was discovered by chance in a trench designed to investigate something else; how many more such sites, in the Cheviots and elsewhere, must still await discovery? Not far from it, a prominent cairn, unusually surrounded by an oval-shaped low wall (which appears to have been aligned on the distant profile of Simonside to the south; Frodsham 2004), was also investigated, but sadly this had been robbed in the past and nothing of significance was found.

At the south of the north-east region, a fascinating cairn was excavated in 1897 at How Tallon, Barningham Moor (Brown & Brown 2008, 108-113), a site with fabulous views over Teesdale. This was found to contain an empty central cist, but five inhumations were buried within the cairn. These included an adult male within a cist inserted into the top of the mound, in association with which were a Food Vessel, two broken barbed and tanged arrowheads (apparently broken prior to deposition), a plano-convex knife, a scraper and an ox tooth. Lower in the cairn, but above the central cist, was another inhumation, accompanied by sherds of a Beaker and a flint implement. Two leaf-shaped arrowheads and other flints were also recovered, though not in association with any particular burial. Also recovered from the structure of the mound were a number of cupmarked stones, some of which still lie ion the stone fieldwall that crosses the site. This is clearly another complex site, with burials possibly extending over several generations.

One final cairn to mention here stood on the intriguingly-named Kirkcarrion, overlooking the confluence of the Lune and the Tees above Middleton-in-Teesdale; this is another example of a site with fabulous views – today the site is occupied by an atmospheric copse of pine trees which is visible from miles around. When the cairn was dismantled in 1804, to provide stone for walling, a single vessel was recovered from a cist. Sadly, this vessel, perhaps a food vessel, is now lost, and there is little more we can say about the site. It is clear, though, that it must have occupied a strategic position in the landscape, and it is quite possible that it may have contained further burials that were missed as it was dismantled; one or more cists may conceivably still lie within the ground.

The landscape context of many cairns is likely to be significant; a cairn at Wether Hill, Ingram, is located so that Simonside can be seen on the distant southern horizon, and Hare Cairn on the Otterburn Training Area is located so that the distinctive Black Stitchel is visible (Frodsham 2004, 35). Some cairns at Lordenshaws seem to have been deliberately sited by reference to earlier panels of rock art, while cairns at Hunterheugh and Fowberry appear to have been built directly over rock art. Significantly, at Hunterheugh, broken up fragments of rock with cup-and-ring marks were incorporated into the body of the cairn (Waddington 2004). At Street House, Loftus, the Neolithic cairn discussed above was directly overlain by a Bronze Age round cairn dated to around 1800 cal BC; this contained a collared urn containing cremated remains of at least one adult, one child and possibly others, and another containing at least one child. Several cupmarked stones were incorporated into the structure of the mound (Vyner 1984, 1988). At Goat's Crag and Corby's Crag cremations have been discovered at the foot of rock outcrops

(Burgess 1972; Beckensall 1976). This diversity in burial rites is clearer in the upland areas where the superstructure of monuments survives better. In lowland areas, the main surviving site type is the ring ditch. Although many are known mainly through aerial photography, very few have been excavated.

Having considered a few complex burial monuments, it should be noted that others can appear comparatively (if sometimes deceptively) simple. A cremation at West Hepple, Coquetdale, was contained within a single inverted collared urn (Miket 1974; Frodsham 2006) and dated to c1600 cal BC. However, all is not as straightforward as might initially appear, as the urn contained cremated bone from at least three adults and one child. Within a recently excavated ring-cairn on Birkside Fell, near Blanchland in the North Pennines, was a collared urn containing cremated bone from two adults, dated to about 1850 cal BC (Tolan-Smith 2005). Not far away, on Crawley Edge, above Stanhope in Weardale, a cairn dated to c1700BC also contained a collared urn, but the cremated bone within it was decayed to the extent that it wasn't possible to determine how many individuals were represented (Young & Welfare 1992). It is interesting to note in passing that very few Bronze Age burial cairns have been excavated in the North Pennines, but what evidence there is suggests that collared urns are the norm here, rather than the range of food vessels and other urns found elsewhere in our region. Why this should be the case is not known.

It is important to note that in some cases Chalcolithic or early Bronze Age burials were inserted into pre-existing Neolithic monuments, as seems to have happened at the long cairns at Dour Hill, high up in Redesdale (Waddington, Godfrey & Bell 1998), and Harehaugh, at a strategic point in Coquetdale (Frodsham 2006, 63). In addition, at Dour Hill a separate round cairn was built nearby, while a number of small cairns that could contain burials lie adjacent to the Harehaugh long cairn. The splendid long cairn at Bellshiel Law, not far from Dour Hill, also overlooks a large number of small round cairns, though whether these contain burials has yet to be tested by excavation. Why Beaker-period or early Bronze Age burials were added to older monuments in this way is not known, but it could be due to a desire among Beaker-using communities to legitimise new ways of doing things, perhaps by demonstrating apparent continuity with the 'native' ancestors. Perhaps also there was a desire to appropriate the power of these ancient places through rededication linked to one or more new burials. Such continuity in the use of 'special places', notably with regard to Chalcolithic and early Bronze Age burials, is a theme that would repay further investigation at a number of places throughout the north-east. In some cases it seems that the power of these places can be traced back ultimately to features of the natural landscape that may have acquired special status back in pre-Neolithic times; Yeavering is perhaps the most obvious example (Frodsham 2005), but there are many others. It is also important to note that Bronze Age cremations could be added to Chalcolithic monuments, such as those discovered at three of the Milfield henges (two of which appear to be of later Bronze Age date) and the Duddo stone circle, where a cremation was inserted into the site in 1770-1610 cal BC, perhaps three centuries or so after the initial construction of the monument.

While some cremations clearly incorporate the remains of more than one individual, some 'single burials' within cists seem to be of rather less than complete bodies. Two examples of the latter are Allerwash (c2199–2030 cal BC) and Reaverhill (c2135-1951 cal BC), both from Tynedale and both very rare examples of burials with bronze daggers. The burial at Allerwash seems to have been only of the lower half of the body, with the bones curiously arranged within the cist, while that from Reaverhill was missing many bones and those present were 'in disorder' (Fowler 2013). There are a few other examples of such incomplete inhumations from our region, the implications of which remain obscure.

In addition to burials within cairns or barrows, several enclosed cremation cemeteries, within low encircling banks, have been recorded, though not excavated, for example near Brough Law at Ingram in the Cheviots (Topping & Pearson 2008, 52) and at Tod Law on the Otterburn Training Area in Redesdale (Charlton & Day 1977). Some flat cemeteries containing burials placed in cists, with no above-ground trace, have been excavated, for example beneath the Roman fort at South Shields (Hodgson et al 2001) and at Howick (Waddington 2003 et al).

To summarise, there is a huge range in burial practice throughout the Chalcolithic and early Bronze Age that is far too complex to consider here in any detail. Many more sites could have been considered in addition to those summarised above and each site has its own unique tale to tell; there is still much work to be done making sense of individual sites and teasing out general trends and the extent to which these vary regionally and chronologically. Fowler's (2013) synthesis is a key contribution to our understanding of the subject, and provides a sound basis on which to move forward with further analysis and new fieldwork. The different types of pottery vessels (beakers, food vessels, collared urns etc) found in these burials is considered further in the section on pottery, below.

5.5 Rock art

While several significant examples of rock art have been discovered over the past decade, and much useful work completed with regard to surveying, cataloguing and monitoring previously known sites (eg the important contributions in Barnett & Sharpe 2010, several of which discuss the north-east. See also www.archaeologydataservice.ac.uk/era and www.rockartcare.ncl.ac.uk) it is probably fair to say that no ground-breaking discoveries have been made with regard to rock art chronology or function. The situation thus remains pretty much as outlined by Clive Waddington in the original NERRF Assessment – reproduced below with some additions and amendments. Whatever its original purpose, our rock art remains one of the great glories of our region; it invites, if not demands, us to find new and productive ways of studying it (Waddington 2007; Last 2010). That said, it is important to remember that rock art must not be studied as a 'separate subject' – it is the careful examination of relationships between rock art and other aspects of contemporary life that will eventually bear fruit in our attempts

to make progress with what is arguably the greatest puzzle in north-east prehistory.

There has been a renaissance in British rock art studies over the last quarter of a century or so, much of it featuring sites in the north-east. Much recent work has been focused around recording, cataloguing, and identifying associations, with some limited interpretation. The huge contribution made by 'amateur' archaeologists has traditionally been, and continues to be, a fundamental aspect of rock art studies (Boughey 2010; Barnett 2010). Over the years, contributions from Beckensall (e.g. 1992; 1999; 2001), Beckensall and Laurie (1998), van Hoek (1982) and Brown and Brown (2008), all involving countless hours in the field, have been crucial with respect to the cataloguing and recording of sites. Their work has provided a large, and typically well-recorded, corpus of data that has created the basis for the latest research into interpreting these symbols. The work of Bradley has been particularly influential in this regard (e.g. Bradley 1997), and together with others (e.g. Waddington 1998b, Frodsham 1998, van Hoek 2001), has helped to anchor the study of rock art within landscape and contextual approaches.

Rock art occurs in two main kinds of context: first, in the open air, on outcrops of living rock or, more rarely, large boulders; second, incorporated into monuments such as on standing stones or within burial monuments, the latter including cist slabs, kerbstones and small decorated stones incorporated within the structure of burial cairns. In many cases rock art exists within complex archaeological landscapes offering much potential for integrated studies aimed at establishing its place within the lives of Neolithic people. Of the examples on rock outcrops, some are very complex and may have been produced over long periods of time, while others consist of nothing more than one or more simple cupmarks. There are two main concentrations of rock art in open air, non-monumental contexts. In the north of the region, the Fell Sandstone hills that extend in an arc from the eastern fringes of the Milfield Basin in the north to Coquetdale in the south are home to several of the most exquisite rock art panels anywhere in Britain (Beckensall 2001). Well-known examples include Roughting Linn, Doddington Moor, Weetwood Moor, Chatton Park Hill, Old Bewick and Lordenshaws. Waddington (eg 1999) has suggested that these sites may lie within Neolithic upland seasonal pastures, and relate in some way to such patterns of land use. The region's other main concentration of rock art sites is in the south, extending from Baldersdale and Teesdale southwards into North Yorkshire. The art here, to our eyes, may not appear as attractive as many of the northern panels, but there are still some complex and fascinating examples (Beckensall & Laurie 1998; Brown & Brown 2008). Examples include Barningham Moor (where some 140 individual decorated rocks have been recorded), Scargill Moor, Stob Green near Eggleston, East and West Loups's, Goldsborough, and Howgill Grange. Paul and Barbara Brown (2008) discuss how many of these sites could relate to natural routeways through the landscape. While several examples of rock art have been recorded outwith these two major concentrations, there are also vast areas of our region without even a single example; the reasons for this remain obscure.

As interest has grown and research papers have multiplied, key areas of debate have emerged, perhaps the most crucial of which is chronology. Without a sound grasp of the dating sequence of rock art, and the timing of changes in the circumstances and contexts of deployment, it is difficult to attempt meaningful interpretation as rock art sites will remain divorced from their contemporary contexts. It does appear that rock art on natural rock outcrops is mostly if not entirely Neolithic in date, though it is far from clear exactly when during the Neolithic it was produced, or for how long it remained significant. There is no evidence for the continued production of such art after the Chalcolithic (Beckensall and Frodsham 1998), and it is possible that its decline is linked in some way to increasing degrees of sedentism in the settlement pattern; whatever the original 'purpose' of the rock art, it appears to have become redundant by the middle Bronze Age when permanent farmsteads were being established in many places. There is still much to be done with regard to the chronology of rock art; once a broad chronology has been established, then detailed regional sequences can be attempted and possible relationships with other rock art from Atlantic Europe investigated.

Other important associations that require further research and debate include the linkage between quarried rock art panels from outcrop rock contexts and their re-use in later monuments of different forms and date. There is now clear evidence to show the use of cup-and-ring marked panels in monuments ranging from the 4th millennium cal BC to the beginning of the 2nd millennium cal BC. A general sequence that appears to hold true is that an early phase of rock art occurs on natural outcrops of exposed rock; these carvings are then later incorporated into the full spectrum of Neolithic ceremonial monuments, from long cairns and stone circles to standing stones and henges. By the early Bronze Age they are incorporated specifically within the burial monuments of the dead. While some early Bronze Age cists incorporate pre-existing rock art that had clearly been eroding in the landscape for a long time, possibly several centuries, prior to being quarried for use in these 'new' monuments, in some cases pristine new decorated slabs were produced specifically for cists, the best such example perhaps being the splendid slab from Fulforth Farm, Witton Gilbert, 6km north-west of Durham City (Wright 1998; Brown & Brown 2008, 172-174).

Change in contextual associations through time were of course complex; some outcrop rocks were clearly inscribed on more than one occasion, sometimes separated by long periods of time (see, for example, Waddington et al 2005), and some monuments (eg standing stones) appear to have had carvings added to them after their erection. The above general sequence, however, remains secure and raises many fascinating questions relating to changes in use, meaning, and significance through the period 4,000-2,000 cal BC.

Establishing associations between rock art and other aspects of material culture remains a tantalising, and in some respects, contested area of study. For example, attention has been drawn to the relationship between the cup-and-ring repertoire and other forms of Neolithic material culture, such as arrowhead forms and ceramic styles, while the latest style of angular and geometric passage grave art (absent from our region) has been related to

Later Neolithic arrowhead forms and Grooved Ware pottery (Burgess 1990; Waddington 1998b; Bradley 1997).

Understanding of symbols is largely formed through the context in which they are experienced, and it therefore follows that any changes in their context of deployment must be indicative of a deliberate change in significance, or in the message they were intended to convey. Changes in the context of rock art through time therefore provide clues to help with the identification of wider social changes taking place throughout the Neolithic and early Bronze Age periods.

6 Material culture

6.1 Lithics

Of the many lithics from the North-East, a proportion are from excavation, but many more come from fieldwalking and as stray finds. With the increase of developer-funded archaeology, lithics are increasingly being recovered, often as residual finds during excavation of later sites, but are rarely subjected to anything but the most basic analysis. Historically, several individuals have made major surface collections: Joan Weyman in the Tyne Valley and Milfield Basin, William Cocks in the Lower Tyne Valley, and Francis Buckley along the Northumberland coast. These collections are all held in the Museum of Antiquities in Newcastle. Another major collection is that of Fritz Berthele, much of it arising from his surveys of land freshly ploughed for afforestation in North Northumberland (Hewitt 1995).

In the Early Neolithic there are several innovations that serve to distinguish lithic technology from that of the preceding Mesolithic. There is a widespread adoption of grinding and polishing techniques, and polished stone axes replace Mesolithic flaked axe heads. There is also a more widespread use of pressure flaking, although there is a continued reliance on narrow blade technology. A number of new forms are introduced, including leaf-shaped and laurel-shaped arrowheads and invasively retouched sickles. The greatest changes appear to be among the most symbolically important tool types, such as axes, knives and arrowheads. The symbolic importance of axe heads is indicated by the probable votive cache found, probably in a ditch, at Heddon-on-the-Wall (Burgess 1984, 140; Sockett 1971).

Leaf-shaped arrowheads have often been found in association with late Mesolithic flint scatters, such as at Low Shilford (Weyman 1980) and Sandyford Quarry Field, Bolam (Waddington and Davies 2002). This suggests either an overlap of lithic technology or use of the same landscape areas in both periods. One of the most important assemblages of Early Neolithic date is the group of nearly 40 flints from Sandyford Quarry. This includes broken blades and flakes as well as a scraper, leaf-shaped arrowhead, core and retouched flakes and blades. It is assumed to be contemporary with the radiocarbon dates from the site of c. 3,700 cal BC (Waddington and Davies 2002). In the Late Neolithic and Early Bronze Age lithic technology shows an increased frequency of retouching and edge polishing, and there is a move

towards irregular flakes rather than blade-based industries. This may be a reaction to a change in resource availability, with poor-quality local flint being replaced by high-quality imported flint. While the quality of many basic tools appears to decrease, high levels of workmanship continue to be found in items with a greater symbolic value, such as arrowheads, plano-convex and discoidal and polished knives, adze blades, maceheads, and polished stone and flint axes. The symbolic importance of objects such as barbed and tanged arrowheads is indicated by their frequent appearance in Beaker Burials, and the presence of five untouched arrowheads from Pit VI at Milfield North (Harding 1981). Cruder flint objects are also known from burial contexts, however, such as the roughly worked flints from the Sneep, Bellingham, and Haugh Head, Wooler (Waddington 2004, 65, 81).

Axes and axe hammers come from a variety of sources in this period, the majority from the Group VI Langdale sources of Cumbria. Others are derived from more local sources, such as Group XVIII Whinstone (stone type from Northumberland) (Clough and Cummins 1979) and Cheviot Andesite, probably from the Upper Ingram Valley (Waddington and Schofield 1999). Occasional, more surprising sources are also identified, such as the limestone axe from Milfield.

6.2 Pottery

Much progress has been made in recent years with regard to the classification and chronology of Neolithic and early Bronze Age pottery in our region, though it should be noted this work is based largely on finds from the Milfield area (including many recent discoveries) and there are vast tracts from which no Neolithic pottery has been recorded. The extensive corpus of known pottery provides opportunities for a range of studies in addition to classification and dating, as discussed below.

There are four main styles of pottery relevant to the Neolithic and Chalcolithic in the North-East; Carinated Ware, Impressed Ware, Grooved Ware and Beakers. These have been found at a range of different sites including settlements and ceremonial/burial monuments. In the early Bronze Age, the main pottery types are Food Vessels and Cinerary Urns (including so-called Bucket Urns, Encrusted Urns, Cordoned Urns and Collared Urns). These have been found almost exclusively with burials, which is not surprising given the dearth of known early Bronze Age settlement sites (see above). A separate class of pottery, contemporary with beakers, that appears to provide a link between later Neolithic wares and early Bronze Age food vessels has been identified at four sites on the Milfield plain; this has been labelled ‘beaker period Neolithic-derivative’ (Milson et al 2011).

These ceramic types have recently been considered in great detail (Milson et al 2011; Waddington 2011; Passmore & Waddington 2012, 2013). They can be summarised as follows.

Pottery type	Period	Approximate dates

Carinated Ware	Early Neolithic	4000 – 3500 BC
Impressed Ware	Middle Neolithic	3600 – 2600BC
Grooved Ware	Later Neolithic	3000 – 2400BC
Beakers	Chalcolithic	2400 – 1900 BC
Neolithic derivative	Chalcolithic	2400 – 1900 BC
Food vessels	Early Bronze Age	2200 – 1600 BC
Cinerary urns	Early Bronze Age	2000 – 1400 BC

The earliest pottery in the region is Early Neolithic Carinated Ware (previously known as Grimston Ware). Vessels of this type are thick-walled and well-made with out-turned or rolled-over rims. There is usually no decoration bar some evidence for burnishing and the fabric is usually tempered with crushed sandstone or quartz. Diatom analysis of the fabric of examples from Milfield suggests that the clay came from the River Till, indicating local production (Gibson 1986). In Northumberland there is a cluster of sites yielding Carinated Ware in the Milfield Basin (e.g. Waddington 2000b). Other findspots include Old Bewick, Bolam Lake, Harlow Hill and Hasting Hill. Secure radiocarbon dates come from Coupland, placing it in the early 4th millennium (Waddington 1999, 134-135, Appendix 8).

Impressed Ware (sometimes known as Peterborough Ware) came into use in the North-East in the Middle Neolithic (c. 3600 BC). Thicker than Carinated Ware, it often has impressed patterns made with the finger tips and twisted-cord decorations, and may be burnished. The main regional variant is Meldon Bridge Ware, which has its type-site in Peebleshire (Burgess 1976). This fabric contains large fragments of crushed stone and organic temper. Again, there is a focus in distribution around the Milfield Basin, but this pottery is also known from Allendale, Alnwick and the Ford-Crookham vicinity (Waddington 2000b, 9-10).

Manby (1999) listed eight sites from Northumberland which had produced Grooved Ware, but a recent reassessment by Alex Gibson has suggested that the pottery from Milfield North, Yeavering Henge, Thirlings, and Whitton Hill is more likely to be of Bronze Age date, with the pottery from Milfield North bearing decoration similar to that found on Bronze Age food vessels (Gibson 2002). He accepted, however, the Grooved Ware from Ewart and Old Yeavering, and two more sites from the Milfield Basin area have now also been added to the corpus (Clive Waddington pers comm).

Beakers appear in the region around 2400 BC, and include some of the earliest in the British Isles. A full range of Beakers are known including long-necked, short-necked, bell, and rusticated beakers, and all-over cord-decorated examples. These have zone decoration, a thin fabric, bulbous profile, and a flat base. Although widely found in the region, many vessels come from antiquarian excavations. The major overview of these vessels was until recently Tait's *Beakers from Northumberland* (1965); this has now been to an extent superseded by Chris Fowler's work (eg Fowler 2014). Several beaker burials have now been dated, and dates from beaker pits discovered through developer-funded excavations at a couple of sites in Northumberland are awaited. Currently the earliest dated beaker, a tall short-necked beaker

found with the primary inhumation at Low Hauxley, is 2460-2180 cal BC. The all-over-cord beaker from the Kirkhaugh cairn, though not scientifically dated, must be of a similar early date. The timber coffin from Cartington, Rothbury, that contained a now-lost beaker has been dated to 2470-2020 cal BC. Two dates for the timber cist containing three beakers on Wether Hill, Ingram, range from 2200-1890 cal BC. Carbonised residue on a beaker sherd from Cheviot Quarry has been dated to 2140-1880 cal BC. The chronology of beaker burials throughout the north-east is considered in detail by Fowler (2013).

Beaker period Neolithic-derivative pottery (which has in the past been rather misleadingly labelled 'domestic beaker') seems to provide something of a link between the late Neolithic Impressed and Grooved Ware traditions and early Bronze Age food vessels (Milson *et al* 2011). This pottery displays much variety in form; in comparison with Beakers much of it is manufactured and decorated quite crudely. Examples, all radiocarbon-dated to the Chalcolithic or Beaker period, have been found at half a dozen sites in the Milfield area including Thirlings, Cheviot Quarry South, the Milfield North henge and pit alignment, and the Yeavering henge. The recognition of this 'transitional' native pottery, linking native late Neolithic and early Bronze Age traditions, independently of Beakers, is an important development. As more examples are found, we will hopefully be able to say more about the transition from late Neolithic to early Bronze Age in the north-east.

A broad overview of Bronze Age pottery in the region was published by Alex Gibson in 1978, though this is now in need of revision. Food vessels seem to have appeared later than beakers, perhaps a century or so prior to 2000 BC. They have a wide regional distribution; recently found examples include fragments from the Howick cist cemetery, a site which had produced examples previously (Waddington et al 2003). Another recent example is that from Goatscrag, which contained cremated human remains (Burgess 1972). As mentioned above, a fine food vessel assemblage was recovered from the Turf Knowe Cairns, and a number of fragments were recovered from a burial pit at Wether Hill. It has been suggested by Alex Gibson that the similarity of two vessels at Bolton and Lowick implies they were made by the same potter (Gibson 2002). Cremated bone from a food vessel burial at Low Hauxley has provided a date of 1890-1690 cal BC, while cremated bone from within a food vessel from Alnmouth, excavated by Greenwell in the nineteenth century, has recently been dated to 1920-1690 cal BC (Waddington & Bonsall 2016). For an overview of the chronology of food vessels throughout the north-east, see Fowler (2013).

A further group of early Bronze Age ceramics are the cinerary urns (Gibson 1978). These exist in various forms, of which Collared Urns are the most common in our region. They are known exclusively from funerary contexts, usually being buried inverted (presumably with some sort of lid, perhaps of cloth or animal skin) containing cremated bone which, intriguingly, is often of more than one individual. Urns seem to be slightly later in date than food vessels, although there is almost certainly some overlap between the two traditions. Dated examples from the north-east include those from Birkside Fell, Blanchland, at c1900 cal BC (Tolan-Smith 2005), and Kirkhill,

Coquetdale, at c1600 cal BC (Miket 1974). Some of the decoration on Collared Urns seems to recall that of native Neolithic wares, though no direct relationship has been demonstrated.

The miniature vessels sometimes known as ‘accessory cups’, ‘incense cups’, or ‘pygmy cups’ are an important if poorly understood element of the early Bronze Age ceramic corpus in our region. The purpose of these vessels, which are often very well made and finely decorated, is not known, but they are usually found with burials so are thought to be of ritual significance.

Finally in this section we should note that pottery studies can be about much more than simply classification and chronology. Scientific analysis of carbonised residues on a range of early, middle and late Neolithic sherds, and beakers, from Cheviot Quarry, Milfield, has demonstrated that vessels of all types were used to hold milk-based products, providing clear evidence of dairying from the very beginning of the Neolithic (Waddington 2011). Analysis of some sherds provided evidence of animal fat, plant foods and beeswax (the latter could have been used in the brewing of ale or mead, as well as for sweetening a range of foods). This kind of analysis backs up more conventional palaeoenvironmental techniques to help provide a picture of the Neolithic world.

The analysis of pottery has also been used in recent years to attempt insights into the societies that produced and used it. Dana Millson has undertaken a meticulous evaluation of all known Neolithic and early Bronze Age pottery form the Tyne-Forth area (Millson 2013), and has used this data to consider ‘what the development of the local pottery suggests about interaction between this region and others in terms of changing ceramic styles and identities (Millson 2016, 95). She concludes that our region, despite never having been regarded by prehistorians as any kind of ‘core area’, was actually well-placed to receive and contribute to new ideas in prehistory, and that people here played an important role in broader Neolithic and early Bronze Age networks of communication spanning the British Isles and continental Europe.

While Dana Millson has used ceramic evidence to investigate regional patterns, Ben Edwards has used complex statistical analysis to examine possible social implications of ceramic assemblages within individual pits (Edwards 2009, 2012). For example, he has attempted to construct ‘biographies’ for sherds from Thirlings, from the breaking of the vessels of which they were part through to final deposition in the pits and postholes from which they were eventually recovered by archaeologists (Edwards 2016). He analysed 523 early and middle Neolithic sherds from at least 80 vessels, from 39 different pits (228 pits were excavated at Thirlings, from most of which no pottery was recovered). It is clear that these sherds were not simply buried in ‘rubbish pits’ following the end of their ‘practical’ lives, but were provisionally discarded and stored for lengthy periods (resulting in abrasion, apparently through natural weathering) prior to their deposition in the pits. Edwards nots that the pottery ‘appeasr to have ben treated in a complex and socially rule-bound manner prior to ist deposition, and that the act of pit deposition ‘privileged process over product’ – whatever the purpose of the pits, the act of digging and filling them was apparently of greater significance than the

material contained within them. There is certainly much scope for this kind of analysis using material from sites elsewhere in our region.

6.3 Metalwork

Probably the oldest metal objects known from the north-east are the gold hair tress-rings found in association with an all-over corded beaker in what appears to have been an early metal-worker's grave at Kirkhaugh, South Tynedale (Maryon 1937; Fitzpatrick in prep). It is assumed that the individual buried at Kirkhaugh probably died while on a prospecting expedition in the North Pennines, in search of sources of copper and possibly gold. He probably never found any gold, but accessible sources of copper were available in a few places and may well have been exploited during the Chalcolithic and early Bronze Age, though we currently have no evidence of this and it is perhaps more likely that copper was sourced from Ireland, Wales or Cumbria. Further gold objects from our region include beads from a barrow burial at Corsenside (Hodgson 1827, 167) and rings from Alnwick (found along with a vessel and a bronze axe, ?check source), Heathery Burn (Greenwell 1894), and Stamfordham (Gray 1925).

Fowler (2013, 127-132) presents an important discussion of early Bronze Age daggers found in graves, of which eight are known from our region – all from Northumberland. One from Allerwash, on the north bank of the South Tyne near Newbrough, has been dated to 2199-2030 cal BC; another, from Reaverhill, near Barrasford in North Tynedale, dates from 2135-1951 cal BC.

Several examples of early Bronze Age flat bronze axe-heads are recorded from the north-east, many of them stray finds discovered by metal-detectorists. However, most prehistoric bronze objects known from the region, including socketed axes and swords, are of middle to late Bronze Age date so are best dealt with in the following chapter. Many of these have been found in hoards, often in wet places, and it seems they may have been ritual deposits, thrown into bogs or rivers as 'gifts to the gods' – a practice that may well have origins in the Neolithic though there is currently little evidence for this in our region.

6.4 Other material culture

In addition to lithics, ceramics and metalwork, many other artefacts of Neolithic or early Bronze Age date are known from our region. Jet objects are known from a number of sites including Chatton Sandyford, Kyloe, Capheaton, Yeavering, Blawearie and Kirkhaugh (Jobey 1968; Brewis 1928; Tait 1965, 15-16; Greenwell 1877, 418-420; Fitzpatrick in prep). Amber beads of probable Bronze Age date have been found at Simonside (Frodsham 2006), Old Bewick and Belsay. There is increased evidence for the funerary use of ochre, which has now been found on top of cist covers at Howick and at Hunterheugh (Waddington et al 2003; Clive Waddington pers comm). A small number of the enigmatic carved stone balls found widely Scotland are also known from North-East England. Type 4a stone balls have been recorded

from Hetton and Houghton-le-Side, and several other similar stone balls are in private hands (Speak and Aylett 1996).

Organic remains from this period are sparse. A few antler tools are held in the Berthele Collection, though their precise date and context is uncertain. A 2m stretch of Neolithic wattle hurdling found in the Hartlepool submerged forest is probably all that remains of a fish trap (Waughman 2005; Figure 4). A tree-trunk coffin radiocarbon-dated to 2,400-2,200 cal BC was found at Cartington in Upper Coquetdale (Jobey 1984, Frodsham 2006). Current work at Bradford Kaims (Gardner et al 2015) includes the investigation of extensive waterlogged deposits within which timber structures and other organic remains (such as a timber paddle found in 2014) survive from prehistoric times; further work here way well revolutionise our understanding of some aspects of Neolithic and early Bronze Age life in our region.

7. Major museum collections

All of the regional museums hold some Neolithic/early Bronze Age material. On Teesside some important material is held by Tees Archaeology, including finds from Street House Farm and Ingleby Barwick. In Middlesbrough, the Dorman Museum holds some early Bronze Age material from Frank Elgee's excavations at Eston Nab, and also material from excavations undertaken by William Hornby and John Laverick on Bronze Age burial mounds near Saltburn and Loftus. Other holdings include material from Hinderwell Beacon and finds from E W Sockett's excavations at Mount Pleasant in the Eston Hills. In Durham the two collecting museums are the Bowes Museum and the Old Fulling Museum, where collections are relatively small though significant. The latter houses the splendid decorated cist slab from Fulforth Farm, Whitton Gilbert, along with lithics recovered during the excavation of the site.

The Great North Museum in Newcastle holds a significant collection of over 170 Neolithic stone axes, along with much Neolithic pottery most of which comes from the Milfield area. The early Bronze Age is also well represented with over 100 vessels (many intact) from burials, and 160 bronze tools and weapons (most of which are of later prehistoric date). The museum also holds the early Bronze Age tree-trunk coffin from Cartington, and the finds from the 1935 and 2014 excavations of the Kirkhaugh cairn (the recent finds, at the time of writing, are still potentially subject to treasure trove procedures). A small number of prehistoric objects are held at the museums at Arbeia and Segedunum, mainly objects found on the sites themselves or in the immediate area. A larger collection is held by Sunderland Museum, including pots from Whickam and finds from Hasting Hill. A large quantity of flint found during excavations on the Roman villa at Old Durham is also held there, although it is not clear whether this is Mesolithic or Neolithic in date (it could well be both).

Alnwick Castle Museum holds a number of artefacts found on Northumberland Estate land, including several complete vessels from nineteenth-century barrow digging, for example from Rothbury and Longhoughton (Collingwood

Bruce 1880). Finds from the recent Ingram and Upper Beamish Valley landscape project, including from the cairns on Turf Knowe, are accessioned into Alnwick Castle Museum but currently on long-term loan to the Northumberland National Park Authority for display at Ingram. An important private collection is Fritz Berthele's collection of lithics, now held at Chillingham Castle (Hewitt 1995). An unknown amount of potentially significant material is held in private hands; it would be worth trying to track much of this and at least ensure it is adequately recorded. Much very significant material, including the Greenwell collection (Kinnes & Longworth 1985) is held in the British Museum; for example, vessels and other objects from a number of burials including Copt Hill, Great Tosson, Harbottle Peels, Holystone Common and Blawearie.

References

To be added later.